PROCEEDINGS

OF THE

Medical Society

OF THE

COUNTY OF KINGS,

BROOKLYN, N. Y.

CONDUCTED BY THE COUNCIL OF THE SOCIETY.

1876.

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CORRECTIONS.

Page 125, line 14, after "fast," insert *from.*
" 128, " 10, for "to be," read *lobe.*
" 129, " 3, for "was the seat," read *nor the seat.*

Page 25, Line 13, for "placed," read *found.*
Page 31, Line 14, for "acid," read *ether.*

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, FEBRUARY 15, 1876.

ON CONVULSIONS OF INFANCY.

BY DR. R. HESSE.

So often it happens that we are called to the bedside of a child taken with convulsions, either suddenly or during or following attacks of sickness, that I beg to be excused for taking up a subject familiar to all of us; and yet when we begin to look over cases we have seen or read about, we will find there are some whose nature we do not understand, that seem to have run on and to have had fatal results although we tried our best, while there are others that scarcely have left us time to consider the case, so soon has death set in.

I shall attempt to specify, in brief, the different varieties of convulsions, and shall add a few words about the therapeutics of each.

The *first*, I might even say the most frequent cause of convulsions, is *Hyperæmia of the meninges*, whose symptoms—increased temperature, especially of the head, red face, protruded fontanelles, quick and hard pulse—I need merely mention. This state of affairs we see often in the period of dentition, and very often to satisfy the questions of relatives, or because the doctor himself is not quite clear about the cause, this dentition is accused of having produced them.

The paroxysms themselves are of various duration, of different power and frequency. If there are no heart or lung complications, and if there is no congestion such as is caused by pertussis, we can safely say that the patient will recover.

The remedies we have to use in those cases are cold applications to the head, injections of water and castor oil, mustard baths or poultices to the feet, rubbing the body with hot vinegar—in short, those that will affect the capillaries of the skin in the proper way.

If the pulse is high, the action of Digitalis, perhaps, combined with Acetate of Potash, will be of advantage. The Monobromide of Camphor, an energetic nervous sedative, I hesitate to recommend, as the evidence of its efficacy is as yet insufficient.

Another method to diminish the hyperæmia of the brain is compression of the carotid, either on one or both sides. After having pushed the larynx a little aside, press the carotid against the vertebral column, using one finger; if this pressure is done only on one side, it can be continued for five or six minutes, and the corresponding side of the face will soon get paler. If the vein should be compressed at the same time the color of the face will become darker. The compression at once on both sides is not to be continued quite as long, but may, as well as that on one side, be repeated. In using the compression, we generally find more distinct spasms at first, but as soon as we leave it off drowsiness follows, and thus the attack is checked. If even the compression fails we may try injections with Hydrate of Chloral (5 grains, 1 year old), and after we will see success almost instantaneous. I scarcely need to mention that the patient is to be kept as quiet as possible, as noise or any irritation of the nerves and nerve centres can excite an attack.

In the *second* place, convulsions are caused by *Anæmia of the meninges*, whose symptoms are very familiar to the physicians of this country, inasmuch as we see them in acute or chronic Anæmia, so often caused by Cholera Infantum and Chronic Diarrhœa. We find a cold head, sunken fontanelle, large pupils, small pulse, slow respiration, cyanotic appearance during and after each attack. As we have to deal here principally with chronic diseases which consume the vitality of our patients, we oftener see death following these attacks, caused by oedema of the meninges.

To increase the slow circulation of the blood we use in these cases baths of hot water and vinegar, and are directed to the free use of stimulants: wine, ether, even subcutaneously given, or iron and ether given in the form of tinctura ferri muriatis ætherea, according to the German Pharmacopœia. We put the patient on nourishing food, and to diminish as well the number as the force of the attacks we may use injections with small doses of Hydrate of Chloral.

The *third* cause of convulsions we find in the *Inflammation of the meninges*, as well as the acute or the chronic form, whose symptoms I need not mention. In the acute form we see the convulsions make their appear-

ance early; in the chronic at a later period (fifth or sixth week), with the exception that they are brought on early by pressure, if a large tubercle should cause irritation; otherwise, as stated before, the convulsions set in about the time when pulse and respiration become accelerated.

We all know the quantity of remedies recommended and used in meningitis, and we can by the number of them judge how worthless they have proved to be. I believe that all the cases given as cured are to be doubted. So far we cannot expect much of any therapeutics against the convulsions caused by this disease. The best we can do is to lessen the sufferings of our patient as well as of those who are near the bedside, and for this purpose small doses of the narcotics can be used with advantage.

The *fourth* cause of convulsions we find in the *tumors* situated in the brain, or taking their origin so near the cerebrum that pressure on the brain follows. According to the nature and origin of these tumors we find the convulsions to be generally unilateral, at least so in the beginning, and coming on during full consciousness. However, if we have a chance to watch our patient closely, or if we are guided by clever and observant parents, we will see that there are generally one or several preliminary symptoms, such as periodic headache, irregular pulse, vomiting, erythema of skin, and so on, although it must be said that these preliminary symptoms are often very insignificant, or last only a short time, so that they can easily be overlooked. In other cases the convulsions caused by tumors become similar to those we see in Epilepsy. By several authorities it is recommended to give Iodide or Bromide of Potassium (gr. xx—xxx p. r. n.), and it seems as if their use benefits the patient, at least for a time ; generally the convulsions return after a while.

Considering the sensitive organization of children, we are not astonished to find convulsions caused by *reflex action*, the *fifth* cause of which I shall speak, especially in gastric or intestinal diseases, and we observe that not a serious lesion of these organs, such as occurs, for instance, on their inflammation, is necessary, but that even so slight a cause as too much food, or a kind of food to which the child is not accustomed, will produce one or several attacks. If they are caused by overloading the stomach or by irritation of the intestines we also have preliminary symptoms, such as feeling of compression in the region of the epigastrium, colic, timid expression and pale color of the face, then vomiting, followed by general convulsions with loss of consciousness recurring at short intervals as long as the stomach is not entirely emptied or the irritating matters from the intestinal tract removed. The apt remedies are these : rest, mineral acids or hydrocyanic acid, according to the case.

We find convulsions from colic pains, especially in anæmic or rachitic

children, mostly foretold by pain, flexing the thighs on the abdomen, straining and tympanites. In these cases injections, cold applications to the abdomen and an opiate will be of greatest use.

Convulsions caused by other peripheric irritations, as we see them in the period of dentition, or in fractures of bones following wounds or the use of the catheter, have to be treated according to the irritating cause.

In the *sixth* place convulsions may be caused by the *entrance of toxical matters* into the circulation. To this class the convulsions from high temperature will also have to be referred. Most frequently we see convulsions in the eruptive stage of small-pox, and also in scarlet fever, and even in severe cases of measles they are not of rare occurrence. And as in small-pox, so in scarlet fever and measles, they commence generally with the eruption and disappear as soon as the rash has made its full appearance. Yet often they are so predominant that the difficulty is the differential diagnosis may be great, especially in reference to meningitis.

In this class we have also to register the convulsions caused by Uræmia, and those caused by Œdema of the meninges, following general dropsy. They occur in these latter cases suddenly for the most part, are accompanied by vomiting and have a variable duration. Sometimes the paroxysms are short, sometimes they last one or two hours. The prognosis will correspond to this duration, and is the more unfavorable the longer the paroxysms continue. If they are caused by Uræmia, of course we are to try to get the kidneys to act; if caused by Œdema we increase the circulation by rubbing the surface of the body, or we try stimulating enemas. In any case it is necessary to interrupt the attacks as soon as possible either by Hydrate of Chloral or by Inhalations of Chloroform.

Convulsions caused by opium, belladonna, or similar substances, will have to be treated by eliminating or neutralizing the poison.

In the *seventh* and last class of convulsions I have to mention belong those that occur *without any known cause*, or at least when the cause is not fully understood, as, for instance, in cases of Eclampsia neonatorum. There are convulsions in the early period of life, as well during the first days as in the second or third months, that attack a child as often as five or six times a day, that do not seem to interfere either with the general condition or with the nutrition. Sometimes they are stopped by changing the nurse, sometimes they continue and resist all the recommended remedies (chief of which is Oxide of Zinc), not only without advantage, but with the disadvantage of producing some indigestion. Just as useless is Atropia or Tincture of Valerian. In some cases small doses of Bromide of Potassium are of advantage, and if small doses have no

effect we are justified in increasing the doses even up to fifteen or twenty grains, p. r. n. In some cases at last, when everything seems to fail, Extract of Calabar is recommended in doses to be daily increased, commencing with one-sixth of a grain twice a day, but if there is any effect it will appear in the first three to five days.

As I had failed to find in our text-books these different kinds of convulsions grouped together, and as they are generally dispersed through the chapters treating of the different diseases in the course of which they occur, I had thought it proper to collect the material and present it in as concise a manner as possible, for if they are dispersed in our text-books, they are likely to be dispersed in our memories, and this brief resumé will at least have done no harm.

In the discussion that followed Dr. Hesse's paper, Dr. Walker remarked concerning infantile convulsions occurring in malarious sections, that a proportion of the cases yield to quinine and to nothing else. Veratrum answers a good purpose in some cases.

EXTRACTS FROM A PAPER ON EUROPEAN IDEAS OF MEDICAL EDUCATION IN THE U. S.

BY THOS. P. CORBALLY, M. D.

The charge that we are deficient in general education, that we lack mental training, that the time required for medical studies is inadequate and the course itself defective, is not the only and the gravest charge that is brought against us. We are accused of selling medical diplomas throughout Europe and of establishing agencies in different countries for the purpose of carrying on this vile traffic.

From a New York paper I clip the following item :

"The *North German Gazette* says there is reason to believe that the government will shortly take steps to prevent the abuses arising from the sale in Germany of American medical diplomas, nearly all of which purport to come from Philadelphia."

This is a grave charge and one not flattering to the American people. We find an explicit charge made in the report of Le Fort. The author says that he did not visit this country himself ; but forms a general idea of the profession here from Valcourt on "Medical Institutions in the United States of North America, a report presented to his Excellency the Minister of public instruction, the 2d of November, 1868."

"The State," says the report, "exercises no control over medical education, nor over the civil practice of medicine, and if the excessive competition between the numerous schools has brought forward some professors who have acquired an honorable reputation, this loose principle of legislation pushed to excess, as it has been in the United States, has created a most deplorable condition in so far as regards the practice of medicine. There is no punishment for usurping titles and every one may style himself 'Doctor.' But besides this, the title of Doctor, even when legitimately obtained from a University or other school, represents but a very insufficient amount of knowledge; and the title is not only given as the reward of faithful study, but is sold by some schools to individuals residing in Europe who may not be able even to read or write. In proof of this fact I cite the following circumstance:

"[The servant of a friend, Dr. D. was instructed to correspond with an agent for the sale of bogus diplomas, and it was found that one of these parchments representing any kind of degree in arts or medicine could be obtained for 600 francs].

"There are, however, some colleges in America that are not without merit. New York has three: The New York College of Physicians and Surgeons, founded in 1791; the University Medical College, founded in 1841, and the Bellevue Hospital Medical College. Besides New York possesses a School of Pharmacy and a Medical College for Women. Boston has a University and a Medical College, the Massachusetts Medical College; Chicago has the Rush Medical College, and Philadelphia the University that has attracted so much attention. But, since this last named institution is not the least celebrated one in America, we can understand how necessary it is to exercise the greatest caution in considering the value of diplomas granted by any of these corporations that are in no way responsible to the State. And, apart from this, these diplomas, even when legitimately obtained, have no value whatever when compared with ours."

The following *resumé*, from the report of Valcourt, will enable us further to judge of the *idea* they have in Europe of Medical Institutions in the United States. He says: "The time required for medical studies is nominally three years, but is in reality reduced to two; for the student must spend the third year in following the civil practice of some physician in good standing, and must bring proof, by a certificate from his preceptor, that he has complied with this formality. Besides this, the year is limited to the winter session of four months. During the course of his studies, the student is not subjected to any examination. To be admitted to the degree of Doctor, he must be 21 years of age, and transmit to the Dean of the Faculty a thesis written by himself. If the thesis

is considered satisfactory, the student is examined by each professor separately; the examination is not public, and is often given during a *tête-à-tête*, at the residence of the professor. When all the students have been interrogated in this way, the Faculty assemble, and confer on all those that have received less than three black balls, the diploma of Doctor. The number of candidates rejected is insignificant."

Le Fort resumes: "That the faculty may not be astonished at the extraordinary nature of these details, I give literally an article from the By-Laws of the 'University of Philadelphia,' the most ancient and the most celebrated in America, founded more than a century ago (in 1762). 'The candidate shall write a thesis, and defend it publicly before the College, unless he lives beyond the sea, or resides so far in the interior of America that the journey would be too difficult; in this case, he shall send a thesis written with his own hand, and having sufficient merit to enable the faculty to accept it; the applicant will then receive the title of Doctor, and his thesis will be printed and published at his expense.' I may add, in fine, that in America, as in England, they give Certificates of Attendance on the half-yearly course, printed on magnificent parchment, and ornamented with ribbons and seals. The Secretary of the Faculty (Paris) has some copies of these, sent to him by candidates who, relying on their value, asked to be admitted directly to an examination for the degree of Doctor. It is this fact that induced me to call the attention of the Faculty to the condition of American Schools.

"How is it possible that a state of things so deplorable as this can exist side by side with works of the highest order written in America, and especially the admirable publications made by the Medical Department of the army under the direction of Dr. Barnes?

"Without doubt we may suppose the magnificent results obtained by American surgery during the war of secession to be due to the fact that the medical service of the army, has been, contrary to the opinion generally received in France, absolutely and solely under the regulation of the Secretary of War, directed by Surgeon General Hammond, and later by Dr. Barnes; but it remains still to be explained how they could inspire so many doctors with a spirit of research and a closeness of observation such as to enable them to collect and to preserve, during the war, in the medical museum of the Military Department at Washington, thousands of anatomical specimens and the detailed histories of all the sick and wounded—a *feat* such as the military surgery of no nation in Europe has yet been able to accomplish. This is a problem of which I can offer no solution as I have not been able to visit America so as to study its institutions personally. But we must not forget that it is in the hospital that real medical education is acquired, and America possesses

many of these fitted out on a magnificent scale. And lastly, we must consider the fact that many American physicians pursue their medical studies in Europe, some in Paris, but the greater number lately in Berlin, in London, and especially in Vienna."

It is but simple justice to Professor Le Fort to state that in this very able report there is no manifestation of prejudice or partiality ; his great error when criticising the United States has arisen from the fact that the "University of Pennsylvania," and the so-called "University of Philadelphia," are supposed to be one and the same institution—an error not so surprising in a foreigner when we consider the similarity of the titles. The maxim on the title-page of the report and repeated in the body of the work is : "Si la France est de tous les pays à l'exception de l'Espagne et de ses colonies, celui où l'on accepte le plus facilement les révolutions, c'est aussi celui où l'on aime le moins les réformes." This is a quotation from a work on "Military Surgery," written by himself. The special object of his report is to effect, if possible, some desirable reforms in the system of medical teaching in France, and modifications in the laws relating to it ; and the status of the profession in foreign countries has been considered only in so far as it bears on these two questions.

In the animated discussion that followed the paper of Dr. C., it was remarked by Dr. Hesse, that well-informed persons in Germany recognize that the diplomas of different schools have different values—some higher, some lower ; that of the University of Philadelphia is known to be worthless. Dr. Sizer remarked that the average European practitioner, and the citizens generally, look upon American degrees as not worth the paper written on. Those who go abroad soon find this out, greatly to their annoyance and chagrin. Dr. Bell alluded to some points in the history of a Philadelphia and a New Jersey concern which have been engaged in the sale of fraudulent diplomas in Europe. He thought that the French authors quoted by Dr. Corbally were inexcusable in confounding worthy with worthless colleges. The discussion was continued by Drs. Giberson, Reese, Hutchins and Wyckoff.

The regular monthly meetings of the MEDICAL SOCIETY OF THE COUNTY OF KINGS, are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The March meeting will be held on the 21st, at which time there will be presented the following papers :

Some Experiences with Stimulants in Diphtheria, by Dr. Corbin ; Opium Inebriety, by Dr. Mattison ; The Hypodermic use of Carbolic Acid as a Local Sedative, by Dr. Hunt ; Report of a Case, by Dr. Burge.

EDITORIAL NOTES.

——An effort to resume the publication of the Transactions of this Society meets with no little favor, and the fact that eighteen years ago, when our organization was far less prosperous than at present, a similar effort was begun and sustained, is at once a challenge and an encouragement to proceed. During the years 1858 to 1865, there was published, from time to time, a report of the work of this Society, under the title of the "Transactions of the Medical Society of the County of Kings." The first volume began in October, 1858, and closed in December, 1864, and embraced 432 pages, exclusive of an introduction and index to accompany the bound copies. This series was resumed in March, 1865, and continued to be published during the remainder of that year; it was then discontinued, ninety-two pages of the second volume having been issued. The immediate effect of this publication was most happy; and, although more than ten years have elapsed since the "Transactions" closed, their enlivening, strengthening influence upon the scientific aims and labors of the Society is felt at the present time. That the project, entered upon with the present issue, will, in like manner, increase the power and usefulness of the Society, is the expectation of those who are engaged upon it, and this is its reason for being. The scope of the journal is explained by its title-page; but this programme is not to be followed so exclusively as to shut out any matters that are of paramount interest to the profession in this vicinity; and it is not at all impossible that this very modest beginning, undertaken with a certain degree of misgiving, may expand as it progresses. Items of local interest, which find publicity in none of our cotemporary medical journals, will find a place in these pages, and contributions to this fund of news are cordially invited from all sources. Facts concerning current medical literature will not be disesteemed. The circulation will, at the outset, be five hundred copies, to be enlarged as occasion requires, and one copy of each issue will reach every registered physician within the county.

——One condition which this Society has enjoyed beyond many of its neighbors has been a concentration of effort; none of the younger and smaller associations, or sections, or coteries, have assumed proportions that threaten the supremacy of the senior organization, or impair its efficiency. In some cities, the duplication of Societies is absolutely bewildering.

——The book-makers have been active. The sixth edition of Dalton's Physiology is out; the fifth of Hamilton's Fractures; the second of H. C. Wood's admirable Therapeutics; the new Physiology of Flint is virtually a second edition, with amendments. The introduction of the classical element in illustration of this latter book, is not its least valuable feature. The engravings from Sappey also are a delight to the eye. There is always room, we are told, at the top of the ladder.

——Dyspepsia of the Heart.—In the treatment of irregularity of the pulse, it must be carefully ascertained if it is caused by reflex action or by actual cardiac disease. Nothing is more common than for a dyspeptic to say: "I eat and drink what I please; my stomach never troubles me." True, but his heart does, and careful examination will show that his stomach is much less perfect than he supposes. Just so with a man who has neuralgia of the shoulder-joint and a decayed molar: "You need not look at my teeth, I never have a toothache." True, but he winces if we probe the molar, and its extraction is the cure for his neuralgia. The one has toothache in his shoulder, the other has dyspepsia in his heart. Balfour's lectures on cardiac diseases, in the Edinburgh Journal, contains, substantially, the above illustration.

——During the two years of Dr. Skene's administration, over 60 new members were added to the Society, 52 papers and announced discussions were presented, while the average attendance was between 50 and 60 per meeting.

——A new charity in Brooklyn.—An association of ladies has opened a Diet Kitchen at 49 High Street, for the relief of those who are both poor and sick—a most necessitous class. "A beggar that is dumb, you know, may challenge double pity." Applications for food must be accompanied by an order from a physician. Invalids able to pay can purchase carefully prepared articles of diet, the funds to be applied to the charity.

——The Medical Record for 1875 contains the following papers or communications by members of this Society: Dr. C. F. Clark, on amputation of cervix; Dr. Fowler, on tracheotomy by galvano-cautery and median lithotomy; Dr. Beard on electro-therapeutics and on clairvoyance and other delusions; Dr. La Roe on epilepsy; Dr. Pilcher on exsection of maxilla and hydrocele of neck; Dr. Skene on abortion and urethral diseases of women; Dr. Mattison on artificial respiration and on the opium habit; Dr. Prout on actute catarrh. Two reports of meetings of this Society, one giving an abstract of Dr. Gouley's paper on cystitis, the other the discussion on Apocynum and its uses, by Drs. Hutchins, Armor, Burge and others. The Veratrum Viride discussion may be found in the preceding volume (1874) at page 151.

——At the February meeting announcement was made of the death of Dr. J. G. Shuttleworth, at Pensacola, Fla., about January 15. Drs. Burge and Wackerhagen were appointed a committee to prepare an obituary notice.

——The Obstetrical Society of New York met, on the 7th instant, in the parlors of Dr. Skene.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1876.

President.....Alex. Hutchins, M. D.
Vice-President.....J. S. Prout, M. D.
Secretary.....R. M. Wyckoff, M. D.
Assistant Secretary.....J. D. Rushmore, M. D.
Treasurer.....G. G. Hopkins, M. D.
Librarian.....W. W. Reese, M. D.
Orator.....J. H. Raymond, M. D.
Alternate Orator.....W. E. Griffiths, M. D.

CENSORS.

J. H. H. Burge, M. D., G. W. Baker, M. D., A. Mathewson, M. D.,
R. M. Buell, M. D., Chas. Jewett, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1874 to 1878.)

Drs. J. S. Prout,	Drs. R. M. Wyckoff,	Drs. A. J. C. Skene,
B. A. Segur,	W. H. Thayer,	C. H. Giberson,
S. G. Armor,	J. H. H. Burge,	A. Mathewson.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Drs. A. J. C. Skene,	Drs. F. H. Colton,	Drs. A. Mathewson,
J. C. Hutchinson,	J. S. Hawley.	A. Otterson,
S. G. Armor,	L. D. Mason,	G. A. Ostrander,
B. A. Segur,	J. G. Brady,	S. Sherwell,
G. W. Baker,	G. G. Hopkins,	C. L. Mitchell,
H. L. Bartlett,	A. Hutchins,	R. M. Wyckoff,
A. N. Bell,	W. W. Reese,	J. L. Zabriskie,
B. F. Fessenden,	J. H. H. Burge,	G. K. Smith,
	A. Hallet.	

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. A. L. Bartlett, B. A. Segur, W. F. Sanford, C. Jewett, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson,	Drs. W. G. Russell,	Drs. R. M. Buell,
W. E. Griffiths,	N. Matson,	W. F. Sanford,
	F. W. Rockwell.	

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Drs. A. J. C. Skene, C. Corey, B. A. Segur, S. G. Armor, J. S. Prout.

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Is, that it operates by removal and not by creating an odor greater than the one sought to be removed, and can be applied in the most simple manner, diluting it according to the *object* or *locality* to be purified. Indeed, one great element of its successful operation is the capacity of *free diffusion*, causing it to affect and purify the air as well as the walls, ceilings and floors.

In Small Pox.—We are advised that patients feel much comfort from the use of a dilution of one part to twelve or sixteen of water as a wash; it seems to lessen the itching, and cools them nicely by neutralizing the poison. Cloths well moistened and hung in the room and around the patient absorb all the odor present in such case, and prevent contagion. Attendants should wash themselves with a dilution, and also use a similar dilution as a wash for the mouth and throat.

In Typhoid and Scarlet Fever, and all contagious diseases, use one part to six or ten of water as a wash to neutralize fever poison. Saturate cloths and suspend in the room; use freely on all bedding and in the chamber utensils.

For Diphtheria and Sore Throat. Use as a gargle, one part to ten of water, or stronger, according to circumstances.

For Hospital Use, also, it has been proven very useful for various purposes; among others, as a wash for offensive sores and ulcers, sloughing gangrene, cancers and offensive discharges of all kinds; also for disinfecting clothes and bed clothing, bedding, and for general deodorant and disinfecting purposes.

In the Sick Chamber it can be used with perfect safety; when the air is impregnated with the unwholesome odors which the patient is obliged to repeatedly inhale, cloths wet with a dilution of one part to eight should be suspended in the room to absorb the noxious odors. A small quantity should be placed in all chamber utensils before use, diluted one part to eight of water. It will deodorize and disinfect instantly and completely, thus preventing all danger of contagion therefrom.

Uses for the Dead.—It has also proven effective in preserving a corpse beyond the time they can ordinarily be kept, even in cool weather. Two or three folds of cloth laid over the face, or any part of the body, and kept moist, will prevent any noticeable change for several days, and preserve the features in a remarkable manner. By injecting it undiluted, immediately after death, in the various orifices of the body, and then closing them with cotton, it will act as a thorough antiseptic, rendering the use of ice to preserve the body until burial unnecessary.

For all Sanitary Purposes, whether in private families or for hygienic public uses, it is unsurpassed in efficacy. The great advantage it has over other preparations designed for the same purposes is, that while its efficacy is *greater*, the objections to it are *less*, on account of its unirritating, non-corrosive, and odorless qualities.

Bromo-Chloralum works by Diffusion and Contact; the dilution should in all cases be one part to six of water.

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, MARCH 21, 1876.

OPIUM INEBRIETY.

RÉSUMÉ OF A PAPER READ BY DR. J. B. MATTISON.

Attention was called to the increased consumption of opium during the past quarter of a century, and to the inordinate demand at present existing. The marked change in medical practice regarding the employment of this drug was insufficient to account for it satisfactorily; but it was to be found in a diseased condition established among us, not, it is true, enumerated in our nosology, but which has, nevertheless, as asserted by high authority, attained "stupendous dimensions," and which presents, in many instances, a symptomatology as decided and specific as that of the more common ills to which our flesh is heir.

This morbid condition consists in various derangements, mental and physical, as the sequelæ of an excessive consumption, either as to time or quantity—more usually the former—of opium, and becomes thoroughly established after a period more or less prolonged, according to varying circumstances.

This disease claims two classes for its victims; one, comprising the majority, in which patients employ opium, per physician's prescription, without a thought of danger supervening, being unaware of its ensnaring property, and unwarned by their medical attendant, and continue its use until the disorder is entailed upon them; the other those who, with an inordinate desire for stimulants of some sort, have recourse to opium for various reasons, as one demand or another for its use may be upper-

most. The man of letters finds his eagerness in the pursuit of knowledge quickened and enhanced thereby. The orator discovers his flights of fancy and bursts of eloquence more easily attainable with than without it. Authors, under its influence, find themselves in possession of a larger storehouse from which to draw the material for their literary productions. The men and women of society discover the charm of their accomplishments, be the sphere of their adornments what it may, largely increased by its wonderful power; and the votaries of pleasure, exhausted by the round of their dissipating indulgence, resort to it to rekindle in their well-nigh effete frames, the fire that has burned so low and threatens to go out altogether.

After a recital of the symptoms, which, fully fixed, make the life of the sufferer truly miserable, it was noted that the earlier stages of inebriety might be all satisfactory. "The victim takes his first dose and feels exalted, serene, confident. * * * His load of care, the tedium of life, his aches and pains, and 'the spurns that patient merit of the unworthy takes,' are all lifted from his shoulders. * * * The beams pour in, the clouds disperse, and all is bright as noonday." This is the calm; the storm succeeds, and then it is that the hapless individual is given over to a servitude which makes life almost a burden. The time required for bringing about this latter condition varies widely. I have notes of an instance in which the inebriate plodded along through nearly seven years, seemingly contented, save in unimportant particulars, so long as there was no interference with his accustomed intoxicant. Individual instances vary largely regarding habitual consumption. The maximum daily quantity in cases under personal care was 11 grs. morphia, subcutaneously; the minimum, a fraction less than one-fifth that amount. The literature of this part of the subject presents some extraordinary examples. The most notable one of which I have knowledge, occurred under the observation of Dr. John Van Bibber, of Baltimore, and may be found in full in the Archives of Neurology for May, 1875. This gentleman reached a maximum of 60 to 80 grs. morphia, hypodermically, per diem, with the addition of from one to three pints of whisky, and eight or ten strong cigars. Under treatment he improved, but eventually succumbed to the triple pressure of his alcohol, opium and tobacco.

Opium inebriety presents itself in a twofold aspect, a vice and a disease. Cases, primarily the former, sooner or later eventuate in the latter. As a vice, those instances in which its initial taking is merely a reprehensible desire for its stimulating properties; as a disease, cases where its primal employment is legitimate, having the sanction of pro-

fessional authority, and wherein its use is continued until the morbid condition is established.

The line of demarkation cannot, with positiveness, be predicted. While volition exerts a controlling power, we have a vice; when its reign is ended, the disease. The shortest time of which I have known required for producing the latter was three weeks. Then the disease was subdued, the opium not.

Opium inebriety demands a soil congenial. The nervous temperament furnishes a fertile field. We are essentially a people of this type. Neurotic diseases are rife among us, increasing rather than otherwise. To their growing frequency and consequent freedom in the use of opiates is to be ascribed, in much measure, the alarming proportions to which this disease has attained.

The majority of individuals liable to become inebriates possess a constitution strikingly in harmony with the seductive properties of opium. The leading factor in this favoring condition is a strongly marked *hereditary* tendency to debility of the nervous system, as evidenced by an ancestral mortuary record in which neurotic lesions present a prominent predominance. I do not wish to be understood as saying that the one is of necessity the corollary of the other, but I believe the exceptions not numerous, and if the proposition, in the main, be correct, the care demanded in determining the status of an individual from the stand-point of hereditary tendency, prior to the prolonged administration of opiates, is too obvious to call for comment.

Relegating to abler authority the etiology of inebriety in general and restricting attention to this special type, What is the initial cause of its development? Do men take opium from choice, merely for its pleasures? or is it that, once ordered on professional authority, and continued a time indefinite, the patient finds himself at length a victim? Touching this testimony varies, though the vast preponderance favors the cause last mentioned. A prominent authority says, "Men take it, not for social enjoyment, but for a physical necessity." Another remarks, "For the primary induction of the habit the stated physician is so commonly responsible, that the *onus probandi* in exculpation rests upon him by all fair presumption." A late English writer states, "The original causes of this diseased condition and its extension are the doctors themselves. * * * * " Another foreign authority observes, "And this is generally the rule, I think, that the majority of habitual opium eaters have, in the first instance, acquired the taste for it after having been ordered it by a medical man." My personal testimony militates a statement as to the voluntary induction of this direful degradation. More than one case confirmatory could be cited.

If this be true, what is the great lesson to be learned on this most important subject? Simply this—that the necessity for caution in the prescribing of opiates rises to that of a *duty*, in view of the fact that much the larger number of victims to this baneful bondage become such through the unintentional ministrations of their medical attendants.

Respecting the prognosis of this affection, various circumstances may exist in individual cases affecting the probability of a successful termination. If the inebriety be the *only* disease, no complication existing, the prospect, of course, is heightened, though I am somewhat skeptical regarding the assertion of a recent writer, himself a ten years' sufferer, but finally relieved, that every case of opium inebriation not complicated by organic derangement admits of cure. The extent of habituation as to *duration* is of greater import in determining the likeliness of a favorable eventuation than the mere daily quantum consumed. The longer the addiction the less favorable the prognosis, though to this rule there are, I believe, some striking exceptions. Much, too, depends on the patient's condition at the time restorative measures are adopted. If the general health be not very greatly impaired, and if, in addition, can be aroused an earnest purpose on the part of the sufferer to co-operate cordially with whatever mode of medication be adopted, an unyielding resolve to persevere in treatment, never doubting the issue, a strong point is gained, and the prospect of recovery very greatly enhanced. Dr. Lewinstein says that scarcely twenty-five per cent. recover. Dr. Parrish remarks, "Of the cases miscellaneously presenting, one-third are curable if conducted under institutional regime." Dr. Day gives similar testimony. Dr. Calkins writes, "In a certain percentage, not yet defined, of cases curable, but under this primary and essential condition, that the patient is for the time being morally, if not physically, subject to the supervision and guidance of his physician." Dr. Van Deuser observes, "Our experience has satisfied us that a large share of the cases deemed as having got beyond the reach of medical aid can be successfully conducted; but then on this one condition only, that the physician shall have the entire and exclusive control. As for efforts at reformation voluntarily undertaken and successfully carried through, the cases are so extremely exceptional as never to be counted on, but when a course of treatment has been submitted to and faithfully prosecuted to the end, the result is directly the other way." My personal experience in the management of this disease is entirely substantiative of this latter statement.

Regarding the treatment of this affection, a wide diversity of opinion exists among professional men, as to the propriety of a sudden or gradual withdrawal of the habitual intoxicant. There are those eminent

in the fraternity who favor the former practice, and in one case under my care, a prominent surgical authority advised the man's incarceration, and the morphia shut off at once and forever. Sooner than submit, the patient declared to me he would have attempted self-destruction. Howe, in "Emergencies," asserts that "tapering off will not result in cure." This statement is a very mistaken one, as the successful experience of more than one practitioner can well attest. Dr. Lewinstein states, "This is best effected suddenly rather than progressively, the economy supporting an energetic procedure of this kind more easily than one more gradually conducted." Dr. L.'s cases may have been such as to warrant him in this assertion, but as applying to opium intoxicates in general, I am doubtful.

In large inebriate asylums immediate abandonment is urged as being more active and prompt, but it must be remembered in this connection that these institutions are able to impose physical restraint if demanded, and without which, in well marked cases, it is well nigh impossible to secure success, if this plan, which may well be called heroic, be adopted. Advocates of this method argue that opium is a poison, and, as such, should be at once discarded; and that its votaries, so long as they are allowed to experience its exhilarating effects, be they never so limited, clamor for its continuance. I confess myself unable to appreciate the logic of the first proposition, and as to the latter, it is a fact that, so far from actually craving the drug, opium habituates entertain a feeling distinctly the reverse. Instead of a longing, a loathing—a disgust rather than a desire; for, be it remembered, the morbid appetite is the result of the diseased condition, and as such strictly involuntary and outside the will's domain. Absence of the accustomed supply gives rise to great mental and physical discomfort, almost invariably precipitating the patient into a renewal; but this proceeds not from any wish for its merely exhilarating effect, for, in many instances, this is lost altogether, but for the sole and absorbing reason that the will is weak, and when the crucial time arrives gives way entirely, so that, to use the striking language of a sufferer, "the drug-damned victim resumes the hell invented curse."

Opposed to this treatment is what may be termed the *reductionary* mode of management, which consists of an immediate diminution of the accustomed inebriant to the point of toleration, and thenceforward its decrease in quantity, more or less minute, according to the degree of suffering attending its withdrawal; meanwhile surrounding the patient by circumstances hygienically favorable, and employing such direct medication as will best tend to sustain and strengthen the shattered nervous system, and make amends for the abstraction of the adventi-

tious support. The leading advocate of this method, in this country, says, "Our experience in the treatment of opium cases has satisfied us that it is neither wise nor humane to deprive the sufferer of his usual allowance all at once, but rather to grant a certain indulgence; our practice is, in the general, to curtail by two-thirds, and upon the remainder to make reductions by inconsiderable fractional differences." A similar course is, I believe, pursued in the public institution under care of members of this Society. It has, too, operated successfully among cases in private practice, and is, in my judgment, best adapted to a majority of instances of the disease.

The reasons advanced in its favor are, that by it is avoided the shock which would of necessity ensue on a peremptory setting aside of the entire supply. Again, patients presenting themselves for treatment are often so reduced in their general condition as to require some restorative measures in order to recuperate up to a point at which they will be better able to bear the pressure when the time of trial comes. Then, too, by this plan can sooner be secured the confidence of the patient, a factor of no trivial significance, since, by assuring him that the treatment will be as painless as it can well be made, his courage, all too drooping, more likely can be revived, and he induced to lend his co-operation with whatever measures may be deemed advisable; and by thus securing the trust an excellent foundation is laid for the moral part of the treatment, which must, most certainly, react with favor on the physical.

At first sight an immediate reduction of one-half or two-thirds seems almost dangerously rapid, but the fact is, opium inebriates often become possessed with an idea that their supply must, from time to time, be increased, so that at length they are consuming a quantity entirely in excess of what is actually required, and a very decided decrease occasions but little inconvenience. I remember an instance in which the descent was made from 5 grs., hypodermically, daily, to $\frac{2}{3}$ of a grain, before any material discomfort was experienced.

In the front rank of therapeutical measures is to be placed what may be termed a stout diet; an abundance of richly nutritious food of such character and variety as shall, in the judgment of the practitioner, seem best adapted to repair the waste which has been effected. The signal advantages obtained in the treatment of other neuroses by a full amount of fatty food, present the strongest argument for its employment in the one under consideration. As an admirable adjunct, cod oil is commended. Of the strictly medicinal agents, various helpful resources are at command. Strong nerve tonics are demanded. Strychnine, preferably the sulphate, subcutaneously, in full doses, is valuable. Whether or not a system saturated with opium is less susceptible to the specific

effects of this drug, certain it is that I have given somewhat surprisingly large doses before any evidence of strychnism was developed. Arsenic is a roborant of value. Its power as an efficient nerve-strengthener is indisputable. * * * Ferruginous preparations, especially tincture of the chloride, generously given, are of service. These three are the leading agents of this class, given alone, or what I have been led to regard with favor, in combination. Phosphorus, quinine and the minor tonics may be employed as adjuvants. I believe electricity, from its well-known tonic and sedative properties, to be well adapted to the treatment of this disease. * * * *

The invigorating effects of cold-water baths, simple or salt, sponge or shower, followed by a liberal amount of friction, are serviceable. The value of alcoholic stimulants is a mooted question; by some condemned as worse than useless, by others esteemed. Regarding this point, individual peculiarities are to be respected. Important auxiliary aid may be secured by a judicious employment of exercise, especially pedestrian.

For the sorely-besetting alvine torpor, atropia is the remedy par excellence. Hypodermically administered, 1-60 to 1-30 gr. at bed time, it has, in my experience, always secured relief. It possesses additional value in restraining the excessive ephidrosial action resulting from the opium withdrawal, and is, besides, a stimulant of unquestioned power to the sympathetic nervous system, which bears, in large measure, the brunt of this disease.

Of the suffering ensuing, when the tolerant point is reached, that connected with a want of sleep stands prominent. The insomnia is sometimes so decided as to defy relief, save by a temporary resort to opium. Of hypnotics my preference is for chloral, but it needs be dispensed with a lavish hand. I have given 30, 40, 50 and 60 grs. consecutively of a night, before the agrypnia subsided. Bromide of potass. is valuable, but it must also be given freely 1 to 3 drachms in 24 hours. The other bromides are of service. A combination is sometimes advantageous. Mono-bromide of camphor commends itself. The warm bath is often effectual. The lesser soporifics—hashish, henbane, ether, lupulin, valerian and others have a value. I have seen sleep secured by the inhalation of a very small quantity of chloroform. Where everything else fails, a full dose of the accustomed opiate is advisable.

The intense epigastric distress, the neuralgic aches and pains, and the almost insupportable sense of general discomfort, are rendered more endurable by the employment of warm baths, local or general, of simple

water, or with vapor or air, as in the Roman or Turkish. They are unquestionably of great restorative value.

The resultant diarrhœa, unless excessive, demands no special attention. When required, warm water enemas, with mercurials and mild astringents are indicated.

In the attention thus given the body proper, that directed to the mind is of thorough importance. In an affection in which the phenomena of perturbed mental action are so conspicuously prominent, the value of psychical treatment is at once apparent; with its details I'll not detain you. Suffice to say, they comprise such social surroundings and sustaining sympathy as will tend to reanimate the prostrate spirit, so that with renewed physical strength and restored will-power, life in its pristine integrity may be resumed.

A CASE.

BY DR. J. H. H. BURGE.

A gentleman, while crossing the ferry, was suddenly seized with a slight faintness, the least appreciable nausea, and an indescribable sense of distress in the chest. He walked about the cabin, but feeling no better was escorted by a fellow passenger to his home. I was immediately sent for, but not being found, the messenger hurried to the offices of Drs. Conkling, Mitchell and Hallett, all of whom were out. He then met Dr. Armor, who went at once to the patient. The symptoms already described still existed. The principal of these was the restless, anxious expression and the indescribable sense of distress referred to the centre of the chest. There was no difficulty of respiration, no abnormal resonance or dullness on percussion. Auscultation revealed nothing whatever as to heart or lungs. The least possible irregularity, perhaps, of the pulse, but not more than might be attributed to the nervousness caused by the patient's evident anxiety concerning his condition. There was no change of temperature, no chill, no fever. He had taken a light dinner an hour before, and the most natural supposition was that some article of food distressed him. He had, however, never been dyspeptic, and had taken nothing unusual at dinner. He was fifty-seven years of age, and this was about the first time in his life that he had asked the advice of a physician. Dr. Armor directed some gentle aromatic stimulant and a mustard plaster upon the chest. When I reached him an

hour later he was neither better nor worse, walked the floor constantly, said he could not keep still, had no pain but was in great distress. I ordered a large hop tea injection, which caused a free alvine evacuation, but gave no relief. I told the family that there seemed no means of determining what the trouble was, but that I would come in from time to time in the course of the afternoon and evening. When I left him at 7.30 P.M., there being still no change whatever in the symptoms, I told his son to apprise me immediately if any occurred. About ten I was summoned in haste to find him dying. The change for the worse was instantaneous and was accompanied by a cry for help. From that moment he hardly spoke, and in half an hour was dead. From the whole history of the case, taken in connection with the mode of death, you will have no difficulty in conjecturing the cause ; yet without the revelations of the autopsy, it would be difficult to devise a theory which would cover all the symptoms and call for no more than really exist.

Dr. Raymond made the post-mortem on the third day in my presence. Upon raising the sternum, the right pleural cavity was seen to be full of serum. How could this be, when no dullness on percussion and no change in the respiration had been observed? When I tell you that at the bottom of this fluid there was an immense clot, you will understand that this was merely the result of coagulation, and that the hemorrhage had filled the entire right pleural cavity, and also that this hemorrhage occurred in the few minutes which immediately preceded death. What, then, was the cause of the earlier symptoms? Upon careful examination it was found that the blood had escaped from the thoracic aorta through an aperture about the size of a quill, and that there were very many spots larger and smaller where the walls of the aorta were so thinned as to be almost perforated. They would yield to the slightest force and were quite translucent. At one point only had the perforation actually occurred, and this opened into the posterior mediastinum. Now the capacity of this space is about one pint, and when it was filled to its utmost the hemorrhage was of course stayed. This took place on the ferry boat, and not being sufficient in the case of a strong man to cause syncope, or to produce any of the marked symptoms of internal hemorrhage, we were quite in the dark. 'Twas not until eight hours of continued pressure caused the pleura to break through that the right pleural cavity filled, and death almost immediately ensued. The aorta was extensively atheromatous, the heart itself being quite free from disease. The patient belonged to a long-lived family. His father has since died of extreme old age.

CARBOLIC ACID AS A LOCAL ANÆSTHETIC.

BY DR. J. H. HUNT.

Now that the cry is being raised against that ready relief of pain, the hypodermic administration of morphia, the mind naturally casts about for something to take its place in that large class of diseases in which, however widely they may differ as to situation, pathology, etc., the ever present symptom is *pain*, and whatever may be the proper treatment for the disease causing the suffering, the cry of the patient is for immediate relief from the racking pain which is exhausting his vital powers. All admit that our first duty, in a large majority of cases, is to cut short pain in the quickest way available.

That we have an agent which will at all times completely relieve pain in the hypodermic syringe and Magendie's solution of morphia, we all know; but we are equally aware that it is not always safe or expedient to use morphia, and it is in some of these cases that I submit my mite of experience with a substitute.

I am aware that there has already been much said about carbolic acid, that it has greeted our ears, eyes and olfactory organs until we are quite nauseated with it; but notwithstanding this, I introduce the unsavory subject again, if not in a new dress, in one at least in which I have not met it in this Society.

The first case is that of R—— A——, aged 41, a native of Ireland, occupation, clerk; suffering with severe pain in the left hip and thigh, extending down into the leg as far as the ankle, following very closely the course of the sciatic nerve. The history he gave was that in December preceding he had fallen on the ice and struck his left hip, with but slight symptoms of injury at the time. Soon afterwards he complained of pain in his hip, gradually extending down the thigh and leg, all the while getting worse until I saw him, when he was unable to attend to any kind of business, and very much emaciated and debilitated by the almost constant racking pain, unable to sleep and scarcely able to walk. I began treating him with galvanism (constant current), one electrode being applied along the course of the sciatic nerve, with the foot resting on a copper plate attached to the opposite pole of the battery, together with general tonics and cod-liver oil, at the same time controlling his pain by means of hypodermic injections of morphia.

After a few days, the morphia disagreeing with him, I gave it up and substituted for it the subcutaneous use of carbolic acid.

I used a solution of twenty minims of Squibb's pure acid to the ounce of distilled water, and injected 33 minims (all that my syringe would hold) of this solution along the course of the sciatic nerve, and introducing it as deep as the needle of my syringe would admit. There was no perceptible irritation or inflammation following, and the patient had complete relief from pain for the next twelve hours, which was longer than the influence of the morphia had lasted, and without any of its unpleasant effects. I kept up the injection of the carbolic acid every day for about two weeks, always introducing the needle of the syringe to its full length, and always using all of the solution which my syringe would contain in various points along the course of the nerve, and always with the same success, after which time the disease was so far mitigated that there was no more need of anything beyond the galvanism, which I kept up until a complete cure was made, taking in all forty applications of the constant galvanic current (ten to twenty cells of the Bartlett battery). I am thus minute with this case, not only because it was the first case in which I had used carbolic acid subcutaneously, but also that I might add one more to the list of undoubted cases of sciatica following injury to the nerve, which has been cured by means of electricity, which method of treatment has been almost completely ignored in a recent monograph on the subject by one of our distinguished authorities.

I claim no curative effect of the carbolic acid in this case, but there is no doubt but that it acted as a local anæsthetic, controlling the severe pain until the electricity could get a hold on the disease and effect the cure.

The next case in which I tried carbolic acid subcutaneously was that of Rev. Mr. B——, who came to me one Sunday morning with his head drawn to one side, and suffering severe pain in the muscles of his right shoulder and neck. His case demanded immediate relief, as the pain was so great as to prevent his preaching that morning. I feared to use morphia on account of the mental derangement it might produce, and again tried the hypodermic administration of carbolic acid, injecting all my syringe would hold (33 minims), this time into the substance of the trapezius muscle. In this case, too, the result was very satisfactory. The effect on the pain seemed almost magical, so instantaneous was the relief and the relaxation of the spasm. There was a moderate return of the symptoms, as the effect of the injection wore off during the afternoon, which were again promptly relieved by another injection. A third injection the following day completed the cure.

In this case I know of nothing else which would have fulfilled the indications required—immediate relief from the pain, and leaving the patient's mind so unclouded that he was able to fill his accustomed place in the pulpit.

In the next case, I was myself suffering with supraorbital neuralgia, which was promptly relieved by the subcutaneous administration of fifteen minims of the same solution of carbolic acid used in the other cases. In this case it was about two hours before the enlargement caused by the presence of the fluid beneath the skin of the forehead entirely disappeared.

In a case of acute articular rheumatism of the ankle joint, the pain and tension were greatly relieved by the injection of 33 minims of the carbolic acid solution directly into the joint, so much so that the patient was able to put her foot to the floor, and move the joint somewhat without suffering.

Mrs. C—— was suffering with a severe attack of erysipelas of the face. Her suffering was intense, so much so as to make her almost delirious, and the line of demarkation, which was well defined, was rapidly advancing. I injected ten minims of the solution of carbolic acid in the border of the healthy skin, which I followed up during the hour by three more similar injections in different points along the border of the inflamed part, with such marked relief that the patient dropped into a quiet slumber of some hours' duration. It seemed to promptly check the spread of the disease, and recovery was rapid under the influence of Tr. Ferri Chlor. internally, and the application of Sodae Sulphis.

I have yet to see the first unpleasant symptom following the use of the acid in this way, and, in the limited experience I have had, the effect has uniformly seemed to be that of a local anæsthetic. All of my injections have been made as near as possible to the seat of pain, and I do not know that, like other drugs which we are more in the habit of employing, it would have any effect if injected at a more remote point.

Dr. Herman Schulz has reported over two hundred hypodermic injections of a two per cent. solution of pure acid in various cases, aiming at an antiphlogistic and anæsthetic effect, and he has seen an abscess form but once, and that was not at all attributable to the acid, but rather to a sudden movement of the child's head during the operation, lacerating the tissues with the point of the instrument. His results have been various, as he has experimented with a quite wide range of cases, both chronic and acute, both local and constitutional diseases, but in most neuralgic and inflammatory troubles he generally found prompt and often permanent relief from pain.

He regards it as an important auxiliary in the treatment of pneumonia; though it did not produce any marked effect in the course of the disease, it did effect a prompt and efficient relief of the pleuritic pain, and also of the cough, even when cups and sinapisms had proved inefficient—the effect not lasting, though, longer than from four to eight

hours. In cases of enlargement of the glands of the neck, following scarlatina and diphtheria, he has secured very favorable results.

Other German physicians have had considerable success with it in the treatment of acute articular rheumatism. Herr Goldbaum has, for several years, been employing subcutaneous injections of carbolic acid in articular rheumatism, also in muscular rheumatism, and the anæsthetic effect has been remarkable, continuing for five or six hours. As the patient complains chiefly of the excessive pain and the immovability of the joint, this means is much to be recommended, for by it not only is the pain relieved, but the joint becomes movable, such mobility remaining as long as the pain is absent. He believes that in several cases a favorable influence is exercised on the general course of the disease. The efficacy of the practice is especially seen in muscular rheumatism, so that patients who were motionless from lumbago were, after the injections, able to move; and after these had been repeated several times the affection disappeared.

BROOKLYN PATHOLOGICAL SECTION.

Stated Meeting, Feb. 24th, 1876.

Dr. L. D. Mason presented a portion of the rectum having a perforation, and the following history: P. C., 35, Swede, seaman, entered Long Island College Hospital Oct. 11, 1875. Service of Dr. Dodge. He had had, three weeks previous, retention of urine for twenty-four hours. Relieved by catheter, which required to be used for a week or more. Is now passing pus per urethram. Perineal abscess was diagnosticated, and he was given citrat. potass., 1 scruple terdie.

Two days later flexible catheter, No. 5, English scale, was passed with difficulty, followed by a severe chill and temperature of 104°. He was given quinine and a poultice was applied to perinæum.

On October 14th the perineal abscess was opened, relieving the patient somewhat.

No special thing of interest occurred up to the following January; patient being able to pass most of the urine per urethram, a drop or two only passing by the perineal fistula.

January 5, 1876, Dr. Mason took the service. He noticed, on careful examination of this patient, general progressive emaciation, irregular

chills, profuse sweats, want of healthy reparative action in the incision, and a painful induration in left iliac fossa, well above Poupart's Ligament.

Patient was given quin. sulph. with tr. ferri mur., and McMunn's elixir opii. Tr. Iodine to induration and extra diet. The tubercular diathesis was made out. On January 10th, severe vomiting, evidently fecal in odor, took place, with constipation and tympanites; abdomen slightly tender; was ordered turpentine stupes, enemata and morphine and bismuth, per orem, with relief to the symptoms.

Up to January 24th no marked change. Has had the same profuse sweats with irregular chills, and several free motions have been obtained; the quinine is continued.

On February 10th a small blister was placed over tender spot in left iliac fossa, and on the 14th a fluctuating tumor was suddenly noticed beneath the blister. A fine exploring needle being introduced, gas, strongly fecal, with a few bubbles of fluid, escaped. The tumor disappeared at once.

On the next day, a consultation being held at 1.30 P. M., the aperture had enlarged to size of silver probe, and a fluid of fecal odor was oozing from the spot. Stercoraceous abscess was diagnosticated, and non-interference advised. By February 16th the opening was size of thumb-nail, and evidently opens into the pelvis. Abundant fecal discharge oozing continually.

On February 17th a similar fluctuating tumor appeared in *right* iliac fossa, pressure on which shows communication with the opening in the left groin.

The diagnosis previously made was then abandoned, and that of general pelvic infiltration adopted. The existence of intestinal perforation was favored. On the 19th the right tumor had ulcerated, and was discharging like the left side.

Meanwhile the patient was gradually succumbing to irritative fever, with diarrhœa, etc., and having failed gradually, died by asthenia on the afternoon of February 23d, 1876.

At the autopsy held by Dr. B. F. Westbrook, fourteen hours after death, the apices of both lungs were the seats of cheesy and calcareous nodules, a small cavern existed at the R. apex.

The peritoneal surfaces were glued together by recent exudation of lymph.

An abscess was found filling the pelvic cavity, communicating anteriorly and laterally with the two fistulæ in the groins, and posteriorally with a small fistulous opening into the upper end of rectum. *No com-*

munication was found with the perineal opening. The abscess would contain about one pint.

There was no evidence of disease of the intestinal walls. There was an abscess in each lobe of the prostate communicating with urethra. The perineal abscess reached well up into ischio-rectal fossa. Dr. L. D. Mason, in giving the history, said that the most interesting points appeared to be:

1st. The period of the perforation.

2d. The slight pain and want of other signs of peritonitis.

3d. The pelvic infiltration and perineal abscess were *coincidences*, not dependent on each other.

4th. Were the predisposing causes of perforation and of prostatic abscess, the same, e. g., tuberculosis? In reply to Dr. Rockwell, Dr. Mason stated that there was no possibility of the perforation being post-mortem, as there was a fecal discharge from the groin three weeks before death.

Dr. Rockwell had seen a similar case of three years' standing in a lady, complicated by a urethral fistula.

Drs. Rushmore and Sherwell had met several cases where high grades of peritonitis were free from pain, severe, at least.

Dr. J. C. Hutchison said it would be well to see if ulceration of a tubercular nodule had made the perforation.

N. B. SIZER, M.D., Secretary.

SOME EXPERIENCE WITH STIMULANTS IN DIPHTHERIA.

Dr. Corbin having been suddenly summoned from the city, was unable to relate his experience as per announcement. The President therefore invited Dr. Rushmore to state the views of Dr. Corbin. They are briefly these: That iron and quinine and general tonic treatment act too slowly; that by employing stimulant measures the mortality has been greatly diminished, 14 out of 16 cases resulting in recovery. The point on which Dr. Corbin insists is, that while it is ordinarily difficult, and at times impossible, to get the patient to take a proper quantity of nourishment, by the stimulating treatment appetite is created for food,

and an exceedingly important indication is thus fulfilled. A favorite prescription is:

R. Spts. Frumenti.....1½ oz.
" Ammoniæ Aromat.....3 drachms.
" Lavend. Co.....1 drachm.
Mix.

Of this a tea-spoonful is given every two, three or four hours.

In the discussion following, Dr. Giberson entertained no doubt that a promptly stimulant plan is indicated; he has used it for some years. By it the tendency to death beginning at the heart is greatly obviated; the stress of the disease is tided over, and many more recover than under the less active forms of treatment, and the cases that die are principally those that are carried off by suffocation.

As to diet, he relies mainly on milk and Valentine's meat juice, abandoning the home-made egg-nogg and beef teas. He had occasion that day to compare the course of two cases of similar ages and conditions, one treated by the stimulant plan, another by the non-stimulant homœopathic plan. The former is doing well, the latter steadily declining; the latter plan also absolutely ignores the sanitary condition of the sick room, and the seclusion of the patient and his utensils. The local use of carbolic acid greatly modifies the fetor of the throat deposits.

Dr. Tittemore said he had used stimulants very freely in diphtheria, and by them reduces the temperature in a marked manner. Tannin and chlorate of potash, blown into the fauces through a glass tube, appear to act as a solvent of the false membrane.

Dr. Sherwell recommended the hypodermic injection of quinine in cases where its immediate effects are desired.

The regular monthly meetings of the Medical Society of the County of Kings, are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The April meeting will be held on the 18th, at which time there will be presented the following papers:

Fatty Degeneration and Progressive Atrophy of Muscle, with microscopic preparations, by Dr. G. A. Evans.

A Case of Chronic Synovitis of the Knee-joint treated by Aspiration, by Dr. N. G. Hutchison.

A new Spray Cautery will be exhibited by Dr. J. S. Wight.

An Inaugural paper on Nitrite of Amyl, by Dr. Alex. Hutchins.

EDITORIAL NOTES.

——As SUPPLEMENTARY to his paper in the last issue of the PROCEEDINGS, Dr. Hesse writes:

After having read the above paper before the Society, I came across a report on "The Treatment of Convulsions in Infancy by Anæsthetics," by Dr. Ortille Schmidt's Jahrbücher clxix. I., from which I quote the following:

"The convulsions of infancy are, as to half their number, not malignant; they are for the most part due to irritation of the intestinal tract, and to dentition. Death may be caused by the intensity of the attack, by asphyxia, or by congestion of the nerve-centres; the last the author believes to be a primary cause of death. Cerebro-spinal irritation is always a predisposing cause, leading to hyperæmia, turgescence, and at last to a more or less serious compression, with a certain increase of temperature of the brain-substance; this painful compression is followed by convulsions, proving that they are in fact caused by congestion of the brain."

For that reason he recommends those remedies that in some way or other produce anæmia of the brain, derivatives, cold applications and anæsthetics. These last, he says, "consopiate (retard) the activity of cells, diminish congestion and produce a kind of compression on the blood vessels, and as a consequence, anæmia and sleep" (mentioning as authorities for these points, Durham, Bertin, Donders, Claude Bernard and Hammond). The remedies to be used by him *before* derivating drugs, or before cold applications, etc., are: 1, compression of the carotids, and 2, hydrate of chloral and chloroform. The history of several cases illustrates his views and shows his results. I will add that he cautiously continues the compression of the carotid, 50 to 60 seconds after the attack.

In a case of eclampsie albuminurique, Trousseau compressed the right carotid, the right side being more affected by convulsions, without success, which he obtained as soon as he compressed the left.

——THE CURE OF THE OPIUM HABIT AMONG THE CHINESE.—On the same evening that the paper on Opium Inebriety was presented to this Society, another audience in this city, not far distant, was addressed by Prof. E. W. Clark, recently in the Japan University, on the use of intoxicants among the Orientals, and particularly upon the opium-vice in China. We cannot forbear to mention one point which may prove in-

structive in considering the therapeusis and prognosis of the opium disease. In visiting the mission hospital at Canton, Prof. Clark was taken to the opium ward; he there saw men who evidently belonged to the better classes of society, but who had reduced themselves to want and despair by opium-smoking, and as a last resort had entered the hospital to be cured. Dr. J. G. Kerr, who had charge of the hospital, stated that the habit is broken up with the greatest difficulty, on account of intense cravings and depression which seize the patient after the withdrawal of the drug, which is done gradually but completely within a few days after entering. On the fifth or sixth day the torment is at its height, and some become frantic and break away from the hospital to return to the opium-den. In those who persevere the appetite for the drug declines gradually and generally disappears about the twelfth day, and on the fifteenth day the cure is considered to be effected. The main difficulty consists in retaining the patient under treatment the proper length of time. He is made to promise to remain in the hospital during fifteen days, and is required to deposit such little money as he possesses, which is to be forfeited if he leaves before the time has expired—for if anything will hold a Chinaman, it is his hard "cash;" it operates as a golden anchor to steady him until the storm of appetite is over. At the end of the prescribed time he is discharged cured and his deposit is refunded. * * * A remarkable statement is met in a recent *Lancet*, to the effect that Lord Salisbury defends the English opium monopoly in the East on the ground that the Chinese-grown opium causes skin diseases while the Indian variety does not, and the government is "doing the Chinese consumer a service by enabling him to suffer with a clean skin." A cause supported by such reckless logic cannot long endure.

——Approbation from Sir Hubert Stanley is Praise Indeed.—When the *British and Foreign Medico-Chirurgical Review*, the very cap-sheaf of medical journalism in England, commends the work of American physicians, we can no longer doubt that the work is good. In its last number we find some very golden opinions; Dr. Thomas' fourth edition is called "a model of perfection—classical, and yet clinical in all its details; concise, and yet ample, systematical, complete and circumstantial." (Adjectives can no farther go.) "No wonder that the Germans, French and Italians have deemed it worthy of translating into their own languages." Flint's Practice, Dalton's Physiology and Gross' Surgery are spoken of as having won a reputation amongst us. To these highly valued volumes we may now add a work of considerable merit, "Loomis' Lectures." The *Journal of Obstetrics*, "ably edited by Dr. Mundé," contains "valuable," "sensible," "able" and "cosmopolitan" productions.

——Brooklyn, and One of Her Practitioners, is named in a review of the Transactions of the New York Academy of Medicine. The work of American sanitarians is spoken of as most creditable to them in view of the *political* obstructions which everywhere oppose their efforts at reform. The original observations of Drs. Da Costa, Wier Mitchell, Forbes, Sutton, Richardson and some others are respectfully considered. The report of Dr. Wilbur concerning the management of the New York Asylum for Idiots is quoted with high praise in an elaborate discussion of the present aspects of imbecility and idiocy. The reviewer calls attention to the need in his country of a new means of national usefulness and distinction in the cultivation of that formerly barren field. He concludes with an eloquent plea: "We know the country to be prosperous, contented, healthily disposed beyond precedent; we know that what were the privileges and luxuries of the rich a hundred years ago are now the necessaries of the poor; that knowledge is accessible to all, almost forced upon the indifferent and reluctant; that the mind of the community is quickened and stimulated and moved by enlightened and generous impulses, and yet there is amongst us a race in bondage and darkness, who scarcely realize their own existence, who scarcely hear the footfall of that civilization which rushes past them and leaves them the waifs and strays of mankind; yet who are capable of emancipation and partial enlightenment, who have a right to our sympathy equal to that of the suffering, the blind, the dumb, the heathen."—(*British and Foreign Med. and Chirurg. Review.*)

——Drs. E. R. Squibb and Alex. Hutchins have been appointed as two of the thirty-five delegates to represent the Medical Society of the State of New York at the International Medical Congress to be held in Philadelphia, from the 4th to the 9th of September next.

——The meetings of the Pathological Section of the Society are held on the second and fourth Thursdays of each month, except July and August, at the Brooklyn Eye and Ear Hospital, 208 Washington St., commencing at 8:15 P. M., and closing promptly at 10 o'clock. The requirements for admission are membership in the Kings Co. Medical Society, the presentation of a morbid specimen with a written history, an endorsed proposal for membership at any regular meeting to be acted upon at the next meeting, and the payment of an initiation fee of two dollars, which includes the annual dues (one dollar) for the year. There are at present more than thirty names on the list of members, and it is desirable to have this number still further increased, that a deeper interest may be taken in the study of pathology, which has contributed so largely to the general store of medical knowledge.

——Our Advertising Pages.—The character and excellent promise of the Proceedings, the compact nature of its circulation, and the certainty of its preservation for reference, have attracted the willing attention of parties interested in appealing to the patronage of physicians. It will be for the interest and protection of our readers to consult these advertisements.

——"An American traveling in Hungary not long ago, attended some sort of public meeting in a large town. One of the speakers had occasion to allude to Boston in the United States. He referred to it as a place well known to his audience, and distinguished not as 'the cradle' of the American revolution, not for its commerce, not for its literature, not for its statesmen, poets or orators, not for its schools, not for its manufactures, but as the place where anæsthesia by means of sulphuric acid was discovered. This discovery has rendered the name of Boston familiar to the dwellers on the Danube and the Caspian. Such a fact may not be gratifying to the vanity of Bostonians, but it testifies to the universal recognition of the inestimable value of artificial anæsthesia." Dr. E. H. Clarke, "A Century of American Medicine," in the *American Journal of Medical Sciences.*

——The Orphans' Home printing-press has recently added steam to its other facilities. The boys turn out very creditable work, and should be encouraged. The Treasurer of this Society has his printing done by them. Address Albany Ave. and Herkimer Street.

——A Change of Specialties.—A gentleman subject to "corns" calls at his chiropodist's after an absence of two years; he finds the same name on the door-plate, but not the same person in the office. Being in doubt, he inquires, "Is this Mr. Foote, whom I consulted two years ago?" "No, sir, my brother was here then—I have succeeded to his business." "He has retired, then, I suppose." "Not exactly, sir, he is not in this branch of the profession now, he is now *on the lung!*"

——The Medical Register.—The material concerning hospitals, dispensaries and other charities and public institutions, which enters into the composition of the *Medical Register*, is being collected for the next volume (1876-77). Now is the time to make corrections or additions to the last published statements; they may be sent to the editor of the *Register* or to our Committee on Registration, Dr. Giberson, Chairman.

——The Prospectus of the second volume of the "Public Health" is before us; this is the title of the annual publication of the American Public Health Association, to be issued by Hurd & Houghton, 13 Astor Place, New York. To subscribers the cost of this volume will be

five dollars. The first volume was pretty generally taken in this county, the second deserves a still more generous support on account of the higher value of the papers selected for publication. A contribution on the "Pollution of the Air by Fœcal Matters," written by Dr. Segur, is the only one from our immediate section; New York and New Jersey furnish some admirable material; the New England element rather holds aloof. Our fraternity have a great stake in the successful progress of the Association, and should sustain its efforts to spread sanitary science through the medium of its published reports.

——The Censors meet on the Wednesday preceding the Society meeting. The credentials of candidates for membership should be in the hands of the Senior Censor, on or before that day. Failure to attend to this requirement has repeatedly given rise to misunderstanding.

——Members having Scientific Matter, suitable for presentation to the Society, are invited to address the President. Papers, when read, become the property of the Society. It is important that but one side of the page be written upon.

——The non-receipt of the communications of the Society by its members, should be made known to the Secretary; also any change of address or removal from the county. Certificates of membership are given to new members on application to the Secretary.

——Our Library.—The report of the Librarian, for the year 1875, shows an addition of about 90 volumes and 120 journals or pamphlets. Nearly all of these were the gift of a lady, Mrs. Marian Christopher, now of New York city. The editor of the *Medical Register* presented a nearly complete file of that publication, beginning in 1862. Any member having books, journals, pamphlets or reports to bestow upon the Society, is invited to address the Librarian.

——The Health of Seamen.—Mention should be made of a humane and at the same time "practical" institution, which cares for the welfare of that very necessary, but most forlorn, class of merchant-seamen, the marine hospital service, conducted by the Treasury Department. This is still a peculiarly American undertaking, having for its principal objects the relief of sick and disabled seamen, and the prevention of disease among them. It is doing a good work and in a very quiet, business-like way. The last report of that service contains a number of interesting papers relative to the objects mentioned, among which one on the Hygiene of the Forecastle is furnished by Dr. Heber Smith of our Society. The Supervising Surgeon, Dr. Woodworth, is entitled to great credit for this work, and for the Nomenclature of Diseases, pub-

lished in 1874, which is by long odds the best and most serviceable Nosology in the English language ; this book has been liberally distributed among the medical profession.

——A PORTION OF THE MORTALITY of this city in 1875 has been published. Deaths from all causes reach the total of 12,433, an increase of 1,422 over the previous year; with one exception, the highest rate this city has yet experienced, and nearly equal to the disastrous "small-pox year," as it is frequently called, 1872, when there died 12,648. Last year (1875) the deaths by small-pox were 624, or 571 more than in 1874, and about 100 less than in the so-called small-pox year. High as this total (624) is, it cannot be fairly considered the full tale, since the deaths of removed cases at the Flatbush hospitals are not included ; what they amount to, probably not less than 100 cases, is not known, and it is to be regretted that they are not enumerated in any accessible or published account. Small-pox is less prevalent than it was some months ago (the week ending January 1st having an unprecedented and historic total of 62) ; still, the deaths from small-pox during recent weeks have occurred at the rate of 400 or 500 per annum.

OBITUARY.

JOHN G. SHUTTLEWORTH was born in Pensacola, Florida, August 15th, 1844 ; spent several years in the Polytechnic Institute, Brooklyn, N. Y., and at school in Marion, Alabama ; studied medicine under the tuition of Professor H. L. Hodge, of Philadelphia ; attended lectures, at the Universities of Pennsylvania and the City of New York, and received the title of Doctor in Medicine at the last named institution in the Spring of 1867. Commenced practice *immediately* in Patchogue, L. I., and soon after moved to this city, where he remained two years.

He was elected to membership in this Society in December, 1869, but left Brooklyn so soon after that he was personally known to very few of us. Those who were most familiar with him testify to his character as a physician of attainments and a gentleman of great generosity. The Pensacola Medical Society has transmitted to this Society a series of Resolutions highly complimentary to Dr. Shuttleworth.

J. H. HOBART BURGE, M.D.,
G. WACKERHAGEN, M.D., } *Obituary Committee.*

Brooklyn, March 21st, 1876.

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Attention is invited to the following analysis of this Extract as given by S. H. Douglass, Prof. of Chemistry, UNIVERSITY OF MICHIGAN, Ann Arbor.

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Malt Sugar, (Glucose) 46.1; Dextrine, Hop-bitter, Extractive Matter, 23.6; Albuminous Matter, (Diastase), 2.469; Ash—Phosphates, 1.712, Alkalies, .377; Water 25.7. Total, 99.958.

In comparing the above analysis with that of the Extract of Malt of the GERMAN PHARMACOPŒA, as given by Hager, that has been so generally received by the profession, I find it to subsantially agree with that article. Yours truly, SILAS H. DOUGLAS,

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By many American physicians, and among others, by such foreign authorities (German, French, and English,) as Niemeyer, Trousseau, and Aitken, the Malt Extract is extolled in the treatment of impaired, difficult, and "irritable" digestion, loss of appetite, sick headache, chronic diarrhœa, cough, bronchitis, asthma, consumption, the debility of females, and of the aged, in retarded convalescence from exhausting diseases, and indeed most all depressing maladies, in which it has been found very sustaining and strengthening, and admirably adapted for building up and invigorating the system. It is often well borne by the stomach when every kind of food is rejected, thus actually sustaining life.

The presence of a large proportion of *Diastase* renders it most effective in those forms of disease originating in *imperfect digestion of the starchy elements* of food.

A single dose of the Improved Trommer's Extract of Malt contains a larger quantity of the active properties of malt than a pint of the best ale or porter; and not having undergone fermentation, is absolutely free from alcohol and carbonic acid.

The dose for adults is from a dessert to a tablespoonful three times daily. It is best taken mixed with a glass of milk, or in water, wine, or any kind of spirituous liquor. Each bottle contains ONE AND ONE HALF POUNDS of the Extract. Price $1.00.

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, APRIL 18, 1876.

THE NITRITE OF AMYL.

AN INAUGURAL PAPER BY ALEXANDER HUTCHINS, A.M., M.D.,

President of the Society.

This pale, straw-colored, volatile, inflammable fluid, lighter than water, boiling at 182 degrees F., with an odor like over-ripe pears, and known as Nitrite of Amyl, recognized in the unofficinal part of the Dispensatory, and not included in the Pharmacopœia, is the subject of this paper.*

Discovered in 1844, by M. Balard, in Paris, its recorded history dates from 15 years later, but not until 11 years further on do the journals show any marked evidence of interest in its unique, and, in many respects, marvelous therapeutic capacities.

Its literary history is scattered at intervals during the past five years through a wide range of journals, native and foreign, though the total number of recorded observers and experimenters is few. Until the present paper no attempt has been made to bring together the results of these various observations and experiments. In 1871 none of the drug was to be found in the metropolitan hospitals of London, and in this intelligent and well-read medical community (unless the writer has

* The wholesale, unaccredited use of others' paragraphs, comprising sections of this paper, is justified by the full bibliography at its end, where the originals of all the quoted observations can be found.

been particularly unfortunate in his inquiries) very little is for sale in the drug stores of this city to-day.

Without further comment, I invite your attention to such a chronological résumé of the recorded investigations as shall distinctly mark the results obtained by the several observers of the physiologic effects of the nitrite of amyl, and then to point out from the record its capacities of application as a remedial agent.

PHYSIOLOGY.

1859. Dr. Guthrie's investigations proved that the nitrite of amyl, when inhaled, possessed the property of causing flushing of the face, throbbing of the carotids and acceleration of the heart's action, and suggested that it might be useful in resuscitation in drowning, suffocation and prolonged fainting. He stated that a drop or two causes, in a few seconds, the most remarkable increase in the rapidity of the pulse, which often rises from the normal standard to 120, 140, or even 160 beats per minute. All these symptoms disappear as rapidly as they commence, and leave the patient perfectly well.

1863. In Dr. Richardson's Report of his investigations to the British Association for the Advancement of Science, he detailed the following conclusions :

1. It is absorbed by the bodies of animals, however introduced into the organism, by the skin, by the lungs, or by the cellular tissue.

2. After its absorption, its effects are seen immediately on the heart and circulation ; there is, in the first instance, violent action of the heart, with dilatation of the capillaries, followed by diminished but not extinguished power of the heart, and contraction of the extreme vessels. As an excitant of vascular action, the nitrite of amyl may be considered the most powerful agent as yet physiologically discovered.

3. On animals, such as frogs, whose bodies admit of its removal spontaneously, and whose circulatory and respiratory systems are simple, the nitrite suspends animation ; and when the animals are placed under favorable conditions for the process of recovery, they may recover after considerable periods of time. There is no other known substance that suspends animation in these animals for so long a period. On warm-blooded animals, which are clothed with thick and less penetrable skins, and in whose bodies the circulatory and respiratory systems are more complicated, the nitrite cannot actually stop the movements of respiration or circulation without destroying life. But even in these animals it can, without destroying life, reduce the forces of respiration and circulation so extremely, that a condition precisely analogous to what is

known as trance or catalepsy in the human subject, can be brought on and sustained for many hours.

4. The nitrite of amyl is not anæsthetic ; by it consciousness is never destroyed, unless a condition approaching death be produced.

5. The effects of the nitrite on the organism are directed to the motor force, which it first wildly excites and then subdues.

6. The *modus operandi* of the nitrite appears to be by arresting the process of oxidation in the tissues.

7. The nitrite paralyzes the nerves from the periphery to the centre, lessening the contractile power of the arteries.

8. Physically the nitrite holds a place between the volatile bodies, such as chloroform, and the solid bodies, such as opium or woorari. Hence its effects are less evanescent than those of very volatile substances, and less certainly destructive than the solid substances. In this lies the secret of its prolonged action.

1864. In a second report to the same Association, Dr. Richardson considered the physiological action of certain of the amyl compounds, amylic alcohol, hydruret of amyl, acetate of amyl and iodide of amyl, concluding that each one of the series destroys the voluntary power of the muscles, but not the *vis insita ;* their action seeming to be purely on the nervous system, and specially on the centres of motion.

The practical conclusions to which the author arrived were : first, he thought that none of these bodies were safe as anæsthetics—they would not replace ether or coloroform. Secondly, the investigation taught a useful lesson in regard to the alliance of the symptoms produced with the symptoms of various diseases. Thirdly, the experiments were of great moment, as indicating how the substitution of one element for another in an organic compound modifies the action of such organic substance on the body.

1869. Dr. Brunton's researches afford the most complete demonstration of the fact that nitrite of amyl produces characteristic effects on the walls of small arteries. It is an open question whether the muscular tissue, or the nerve ends, are the parts of the vascular wall directly affected ; but there is a good deal of evidence that it *does* affect unstriped muscular fibres in other organs besides the arterial walls. The results of his experiments in Professor Ludwig's laboratory are : (1.) That the effect of the drug is to diminish arterial pressure ; (2.) That this diminution occurs as distinctly in animals in which the vaso-motor nerves have been paralyzed by section of the spinal cord in the cervical region as in the natural condition ; (3.) That nitrite of amyl does not diminish the work done by the heart in a given time, although it increases the

frequency of its contractions; and, consequently, (4.) That the nitrite does not exercise its influence on the nervous system, but on the contractile walls of the blood vessels, diminishing the arterial pressure by diminishing the resistance to the circulation.

1870. Dr. Richardson's further investigations lead to the conclusion that the nitrite of amyl has its physiological action directly exerted on the ganglionic nervous tract; it paralyzes so that the nervous supply over the extreme vascular system is impaired; and the muscular system generally, if the effect be sustained, is thrown into relaxation.

1871. The Warren Prize for 1871 was awarded to Dr. H. C. Wood, Jr., for a memoir of experimental researches on the physiological action of nitrite of amyl. The conclusions at which he arrived, on an analysis of forty-nine experiments on animals, were as follows:

Nitrite of amyl produces its characteristic constitutional effects by whatever channel it is introduced to the system, whether by inhalation or injection. The most constant and prominent symptoms are rapid, deep respiration and progressive loss of muscular power. The *post mortem* appearances, after fatal doses, are peculiar in only one respect—the arterial and venous blood are almost indistinguishable in color, the bluish tint being absent and the blood generally assuming a brownish hue, somewhat like that of normal deoxygenated blood.

On the motor centres of the nervous system the nitrite of amyl produces marked impairment of activity, the conducting power of the nerves being greatly lessened but not wholly destroyed; reflex excitability is also impaired, showing that the motor ganglia of the spinal cord are affected. The agent is therefore designated as a powerful depressant of the motor system. In the sensory system there is also impairment of power, less marked and less rapidly developed than in the motor. Sensation is not abolished until near death, and consciousness is retained until the whole system is profoundly influenced. Since this effect on the sensory ganglia is so late and so secondary, nitrite of amyl cannot be considered a true anæsthetic.

In its effects on the circulation, the nitrite reduces the blood pressure by causing primarily a paralysis of the capillaries, and secondarily by a direct depressant action on the muscular structure of the heart, independently of any influence on the central nervous system.

Locally, the nitrite of amyl does not act as an irritant or escharotic, but it does progressively lower the vital actions of the parts to which it is applied, and if the action is prolonged it results in the absolute death of the tissue.

The *modus operandi* of the agent in the system is believed to depend

on its power to check the processes of oxidation, and so to arrest metamorphosis of tissue. The blood change before alluded to, the extraordinary power of lowering the temperature of warm-blooded animals, and the marked diminution in the relative amount of carbonic acid exhaled after the administration of the nitrite, all point to this conclusion as dependent at once on a chemical and a vital action; while, inferentially, the lessening of the functional activity throughout the system, the progressive and gradual character of its local action on the tissues, and the relative effects on more or less highly organized tissues, as on muscle and nerve, point toward the same deduction.

These views were apparently not in accordance with some previous writers, that the nitrite of amyl acts upon man as a powerful stimulant. In a later article the same year, he argued that the sense of fullness and distension of the head, the intense flushing of the face, the deep, labored respiration, and the rapid, violent action of the heart, which are the symptoms induced when it is inhaled by a man in moderate quantities, and which had been looked upon as demonstrating that it acts as a direct vascular stimulant, were really explainable as being the results of the dilatation of the capillaries and the consequent lessened arterial pressure. One of the most marked and peculiar effects of this drug when taken into the system is the prevention of the change of venous into arterial blood. The blood in all the vessels very soon becomes the same or nearly the same hue, and he had found that this was not owing to any action on the nervous system, for it is impossible to oxidize, or at least to produce the change of color commonly attributed to oxidation in venous blood which has been drawn from the body and had a portion of the amyl salt added to it. He found that it does not destroy the conducting power of the nerve-trunks, although it impairs that power. One of its most curious effects is its local action. It is not an irritant, and yet when it is kept long in contact with a tissue it produces death of that tissue, and this applies equally to muscular and nervous tissues. In the majority of cases, when it is simply thrown hypodermically into the muscles there is but little effect, but if kept long in contact with a muscle it produces complete death, local putrefaction following. The drug has the curious chemical property of checking oxidation, and it would seem that it acted on the system by checking the chemical changes which are necessary to the exercise of any function whatever. It lowers the animal temperature to a degree which is almost unheard of in the history of drugs. He had witnessed a case where there was a fall of 12° in the temperature of an animal which had been given nitrite of amyl, and yet death was not produced. It does lower

the animal temperature, and if, as is probable, it should be proven to arrest the elimination of carbonic acid, it would furnish almost absolute proof that it does prevent tissue change.

Prof. Silliman described the nitrite of amyl as an effective agent for the removal of muscular spasm. Its vapor extinguishes flame, and acts as an antiseptic. When inhaled it acts in a wonderful manner to excite the circulation—the action of the heart in man and in warm-blooded animals being doubled in rapidity in thirty seconds. This intense action is followed by great suffusion of the skin, by breathlessness like that produced by violent running, by a peculiar sensation and fullness of the head, with throbbing, and ultimately by failure of muscular power of the extremest kind. It produces no destruction of nervous sensibility, and in animals no increase of sensibility up to the moment of death. It is not an anæsthetic. It appears to act by arresting the process of oxidation in the tissues.

1873. Pick found that the dilatation of the blood vessels, caused by the inhalation of nitrite of amyl, diminishes with their distance from the head, and becomes imperceptible in those of the leg below the knee. It never, even in large doses, produces pain in the head or loss of consciousness, and its effects soon pass off without bad consequences. He denies any simultaneous dilatation of the retinal vessels visible by the ophthalmoscope. He asserts that it produces clearly demonstrable relaxation of the muscular substance of the heart; but there is no increase in the frequency of the respiration, nor of the capacity of the lungs, as shown by the spirometer. He believes that it is a direct poison to the muscles, producing rapid and direct paralysis of them, as shown by an experiment where the sartorii and gastrocnemii muscles of a curarized frog were dissected out, the former covered by a bell glass containing air alone, the latter filled with nitrite of amyl vapor. In about ten minutes the electrical examination showed that the sartorii contracted almost as strongly as before, while the gastrocnemii remained absolutely motionless. He agrees with Brunton that the dilatation of the blood vessels depends not on a central nervous influence, but on the drug's direct relaxing action on the muscular coats.

Dr. Amezdroz considers that the cough excited in some cases by the inhalation of the nitrite of amyl, is due to the irritating effect of the vapor on the bronchial mucous membrane. Following the administration of the nitrite of amyl there is a marked decrease in the intervascular pressure, as shown by the manometer in all his experiments. There is also a constant dilatation of the capillaries, or, more properly, the fine arterial

ramifications, which was not seen in the fine venules, and was but partially found in the capillary net-work proper.

This dilatation is evident soon after the inhalation is commenced, and after a certain time diminishes again, whether the inhalation is continued or not. This contraction continues until the vessel is smaller than before the inhalation. If the experiment is repeated, the phenomena are reproduced, but more rapidly. There is also a constant slowing of the capillary circulation, which follows the dilatation and may be due to the lessening of pressure.

The lowering of the blood-pressure and the capillary dilatation could only be produced simultaneously by an intervention of the vaso-motor nervous system, central or peripheral, or by automatic change in the walls of the vessels. A weakening of the heart's action cannot be considered as the cause, for that alone would not produce capillary dilatation ; this must therefore precede the lowering of the tension, which would be the natural consequence of such dilatation.

A toxic effect upon the vaso-motor centres in the medulla would naturally appear to be the explanation of these phenomena, because direct or reflex irritation of that ganglion produces a diminution of the tonicity of the walls of the vessels. The nitrite of amyl is able to act in two ways upon the vaso-motor centre—either by being brought by the blood directly in contact with that important organ, or by reflex action from irritation of the peripheral nerves. The limited extent of this nervous centre, and the small amount of blood conveyed to it, exclude the first hypothesis, while it is easily seen that by irritation of the peripheral ramifications of the pneumogastric, or some other nerve, the nitrite of amyl may produce a reflex irritation of the vaso-motor centre, and hence a diminution of the tonicity of the vascular walls. Two alternatives remain : either that the peripheral extremities of the vaso-motor nerves are affected, or the intimate muscular fibre of the vessels ; but, as this leads to the vexed question of muscular irritability, it need merely be stated that under the influence of nitrite of amyl, constant dilatation of the pupil does not occur, which demolishes the theory of Brunton, who argued from this dilatation a similar action in all the unstriped muscular fibres. Let it be the one or the other, the blood is really the irritating medium ; and rather than admit a direct action of the nitrite of amyl, which is not probable, we are disposed to take into consideration its chemical effect.

We know that it acts energetically in preventing the oxidation of bodies, and particularly that of the blood, also interfering with the elimination of its carbonic acid. This is corroborated by the post

mortem appearances of the heart and arteries, which are filled with very dark blood. In conformity with theories now generally admitted, this blood, charged with carbonic acid, by strongly irritating the peripheral vaso-motor nervous filaments, or the muscular fibres themselves, might rapidly induce a condition leading to dilatation. We adopt the theory of two species of muscular fibres in the walls of the vessels. The nitrite of amyl produces an irritation of those fibres which preside over dilatation, while those that govern contraction are unaffected by it.

1874. Dr. Aug. Ladendorf instituted a series of observations, embracing more than forty cases, partly upon sane persons, and partly on those recovering from different psychoses, to ascertain the effect on the temperature of the body during the inhalation of nitrite of amyl. These observations were conducted with great care. A table of 34 cases is given, with the temperatures observed, their differences, their maxima and remarks. The smallest maximal elevation of temperature was 0.1° Cent., equal to 0.2° Fahr., nearly (in 3 cases); the highest maximal rise was 1.88° Cent., equal to 3.38° Fahr. (1 case); the mean rise was 0.39° Cent., equal to 0.7° Fahr. (36 cases); or, in other words, the temperature rises rather more than half a degree Fahrenheit after the inhalation of nitrite of amyl. This elevation is evident in the course of the second minute of inhalation. The purer the preparation inhaled, the more evident the effect. The effect on the pupils was not very uniform. In all the cases, when simultaneous observations were made, the axillary temperature rose correspondingly. This is in direct opposition to Wood's observations on animals.

Dr. J. Crichton Browne, while administering nitrite of amyl to a girl who was in the *status epilepticus*, noticed that yawning was produced, and that whenever the inhalation was interrupted the yawning ceased, whenever it was resumed the yawning recommenced. He made a series of experiments by administering the drug to persons during sleep. Out of 57 cases in which he had avoided waking the patient, in 42 there were distinct movements of the mouth, consentaneous with flushing of the face. The most common movements were a depression and elevation of the lower jaw, as if in the act of chewing, and a smacking of the lips. Ether was found, as a rule, merely to deepen sleep, without producing any movements whatever; ammonia always awoke the patient. It appears, therefore, that nitrite of amyl, when inhaled during a state of unconsciousness, has a specific action on the motor centres of the mouth, and calls into action, by preference, the muscles of the lips and lower jaw. Whether it performs this action reflexly, or through the agency of the vaso-motor apparatus, is as yet undecided.

Dr. Filehne believes that the direct action of the nitrite of amyl is not on the vessels, nor on the nerves, but on the nerve centres. He adduces as an argument against the direct action on the vessels the fact that only some of these are dilated, and that the limits of the area of vascular dilatation are pretty sharply marked. If, then, the vessels were affected by the local action of the nitrite, it would be difficult to explain how neighboring vessels, through which the same blood was passing, should react so differently. Again, if the vessels were directly affected, those of the lungs, by which the absorption occurs, ought to be most dilated. He considers the question is settled by the following ingenious experiment: The sympathetic was divided on one side in the neck of a rabbit. The vessels of the ear on that side dilated. The upper segment of the divided nerve was then irritated by an induction current of such strength that the vessels were brought into a condition of mean contraction, so as to equal in size those of the sound side. Amyl nitrite was then administered through a tracheal fistula, so as to avoid the spasm of respiration produced by its contact with the nerves. Immediately the vessels of the sound side dilated, while those on which the divided nerve was being irritated, remained unaffected. A paralyzing action on the vaso-motor centres of the head and neck, and on the vagus centre, similar to that caused by amyl nitrite, is produced in men by mental condition, such as shame or timidity, which is accompanied by blushing and increased frequency of pulse.

1875. M. Bourneville found that the rabbits on which he experimented with nitrite of amyl showed a marked diminution of the pulse rate, injection of the conjunctiva, cyanosis of the tongue, a considerable dilatation of the vessels of the pinna of the ear, and a lowering of the cardiac energy. With large doses, general cyanosis took place, with arrest of the heart's action. The temperature was invariably lowered, the reduction sometimes amounting to 2° Cent. By removing a portion of the scull of a rabbit when under the influence of the drug, he found that the vessels of the meninges were in a condition of dilatation.

Dr. Solger believes that the flushing of the face produced by the inhalation of this drug must be ascribed to a paralysis of the centres of innervation of the arteries supplying a certain area. He suggests that other vaso-moter centres, such as those shown by Goltz to exist in the spinal cord, may also be paralyzed by the nitrite, its action on the vaso-motor in the brain being only the first and most sudden of the series. He observed that, in his own case, prolonged exposure to an atmosphere charged with the vapor of this drug caused, first drowsiness, and then wakefulness, the latter being attended with warmth of the extremities.

Dr. Goodhart *(Practitioner, Jan. 1, 1875, p. 15)* and Dr. Bader *(Amer. Journal Med. Sciences, July, 1875, p. 232)* agree that the arteries of the optic disk are found small, while the veins are dilated and variocose, when influenced by the nitrite of amyl.

It has been frequently observed that objects appear yellow after the inhalation. *Pick, Med. Times and Gazette, Jan. 24, 1874.*
Ladendorf, Berlin, Klin. Woch. No. 43.
Jastrowitz, Wien. Med. Presse, Feb. 28, 1875.

These observations, which make up the physiological literature of nitrite of amyl, agree that the inhalation of amyl nitrite causes flushing of the face, increased rapidity of the pulse, dilatation of the capillaries followed by contraction, and relaxation of the muscles; that it prevents the change of venous into arterial blood, and that it operates by arresting the process of oxidation in the tissues.

They are not agreed as to the parts directly influenced. Brunton and Pick hold that it exerts its direct influence on contractile tissue; while Richardson (the first observer), with Amezdroz, Filehne and Solger, believe that its toxic effect is directly on the ganglionic nervous tract. The experiments of Wood and Bourneville on the lower animals discovered a remarkable lowering of temperature, while the elaborate and carefully conducted experiments of Ladendorf on men showed invariably an elevation of temperature.

That the nitrite of amyl diminishes arterial tension and increases the expansive movement by relaxing the muscular walls of the arteries is the one, salient, demonstrated physiological fact.

That it can, therefore, be made useful in relaxing spasm of muscular fibre is the unique therapeutic inference.

With this distinct, uncomplicated statement, let us examine the history of its therapeusis, reviewing the individual cases only so far as to indicate the observer and the points of interest in the case.

THERAPEUSIS.

ANGINA PECTORIS.

Dr. Brunton comments thus: "From observations during the attack, and from an examination of numerous sphygmographic tracings—taken when the patients were free from pain, while it was coming on, at its height, passing off under the influence of amyl, and again completely gone—I find that when the attack comes on gradually the pulse becomes smaller, the arterial tension greater as the pain increases in severity. During the attack the breathing is quick, the pulse small and

rapid and the arterial tension high, owing, I believe, to contraction of the systemic capillaries. As the nitrite is inhaled the pulse becomes fuller and slower, the tension diminished and the breathing less hurried. On these occasions, when the pain returned after an interval of a few minutes, the pulse, though showing little tension, remained small in volume, and not until the volume as well as the tension of the pulse became normal, did I feel sure that the pain would not return."—*Lancet, July 26, 1867.*

Dr. Leishman reports a case where the violent and excruciating suffering was repeatedly and instantly relieved. The patient subsequently died, and the aorta was found dilated and atheromatous, in parts presenting distinct spicula of bone.—*Glasgow Med. Jour., 1869.*

Dr. Anstie reports a case of severe and frequently recurring attacks, where the sufferer, on the recurrence of each anginal spasm, took one long and powerful inspiration through one nostril, from a half ounce bottle of the drug, and in a few seconds passed from agony into a state of perfectly calm repose.—*Lancet, Mar. 5th, 1870.*

Dr. Thompson describes a patient whose father had died with symptoms of angina pectoris, in whom auscultation revealed a loud, purely systolic murmur at the left apex, and a very faint diastolic murmur at the base, and who had well-marked typical symptoms of angina pectoris, relieved in about ten seconds. It never failed to check the paroxysm and it produced no unpleasant after effects. It did not lose its power from repeated use, but on the contrary, the frequency of the paroxysms diminished.—*Med. Times and Gazette, Aug. 6th, 1870.*

Dr. H. C. Wood, Jr., reports a case of severe suffering connected with valvular disease, and the effect of relieving the heart-pang, after the failure of other remedies, was astonishing.—*Am. Jour. Med. Sciences, Oct. 1871, p. 361.*

Dr. Connor extols this remedy, and mentions a case, accompanied with alternating attacks of asthma, in which prompt relief was afforded after the patient had inhaled from 6 to 10 drops.—*Detroit Rev. of Med. and Phar., Aug., 1872.*

Dr. W. A. Madden, who had cardiac disease, and whose father died of angina pectoris, relates the successful use of nitrite of amyl in his own case. His paroxysms were of frequent occurrence and of increased violence. The amyl strangled the spasm at its birth. It certainly did not last two minutes instead of the old weary twenty. The frequency of the paroxysms was not diminished for some time, but they were mere bagatelles as compared with their predecessors. The attacks became less and less frequent and finally ceased.—*Practitioner, Dec., 1872.*

Dr. A. Osgood says: "I wish to urge the great value of nitrite of amyl in this malady. It is nearly invariably certain in its relieving effects, acts almost at once, is quickly, easily and with proper caution safely given, and spares both patient and physician the tiresome, often ineffectual use of the scores of remedies which are mentioned in the books."—*Amer. Jour. of Med. Sciences, Oct. 1875, p. 360.*

This drug, at the suggestion of Brown-Sequard, was administered to Mr. Sumner, in his last illness, but without avail.—*Boston Med. and Surg. Journal, Oct. 15th, 1874, p. 373.*

Niemeyer says: "It is doubtful if it be in our power to relieve the paroxysms of angina pectoris by any means of medication."—*Vol. 1., p. 374.*

SPASMODIC ASTHMA.

Dr. Jones was called to a young married woman suffering from asthma; found her sitting on the bed, holding to the bed-post. Her surface was of a dusky, leaden hue, bedewed with sweat and cold, especially in feet and hands, which were icy. Pulse could hardly be felt, and she was making the most violent efforts to breathe. She could not speak, only making a few faint gasps. Five drops of the nitrite were applied to her nostrils on a piece of lint. In a minute her face was deeply flushed, her heart palpitating, carotids beating, surface warm, respiration easy, and she was able to converse.—*British Med. Jour., Sept. 30th, 1872.*

Dr. Connor used it always with the happiest effects.—*Detroit Rev. of Med. and Phar., Aug., 1872.*

Dr. Duncan relates three cases promptly relieved by the inhalation of a few drops of nitrite of amyl.—*Mich. Univ. Med. Jour., Dec., 1872.*

Dr. Flagg reports four cases with prompt relief in each.—*Northwestern Med. Surg. Jour., Aug., 1873.*

Dr. Kitchen has used it with invariable success, and argues that as the only muscles in the course of the air-tubes are those of the larynx, it seems unreasonable to infer the existence of spasm at this part in order to account for the asthmatic paroxysm. He believes that the benefit derived from nitrite of amyl in asthma is due to its paralyzing powers on the capillary vessels of the trachea, larynx, etc.—*Amer. Jour. of Insanity, Oct., 1873.*

Dr. Pick has found it palliative in asthma.—*Med. Times and Gazette, Jan. 24th, 1874.*

Dr. Leiser reports three cases, and refers to a number of others in which it invariably gave immediate relief.—*Phil. Med. Times, Oct. 30th, 1875.*

Jastrowitz found it useful and Sadner of occasional benefit in asthma. —*Berlin Klin. Woch., Feb. 15th, 1875.*

In Dr. Osgood's hands it had proved effectual except when patients were in extreme old age.—*Amer. Jour. Med. Sciences, Oct., 1875, p. 360.*

HEART DISEASE.

Dr. Janeway details a case of cerebral anæmia with failure of the heart's action from pericarditis, where the patient was entirely unconscious, pupils dilated, conjunctiva insensible to touch, no pulse at wrist, breathing spasmodic. This moribund patient was temporarily restored by the inhalation of nitrite of amyl, suggesting that this temporary restoration might be at times of great value, and when the lesions were not too grave, might be prolonged into cure and permanent recovery.—*N. Y. Med. Jour., July, 1874.*

Dr. Minich instances the case of an aged and weighty lady, with a fatty, dilated heart, associated with valvular disease. Was found one night in a state of collapse; no pulse, face blue, countenance shrunken, cold sweat, &c. The inhalation of nitrite of amyl restored her. It probably acted by unloading her heart in opening wider avenues for her blood.—*Med. Times, Apr. 10th, 1875, p. 448.*

EPILEPSY.

Dr. S. W. Mitchell says "of its power to arrest the actual convulsion there can be no doubt."—*Med. Times, Apr. 15, 1872, and Med. and Surg. Reporter, Mar. 13th, 1875.*

Dr. Browne reports that the drug seems to have the power absolutely to break up the morbid habit. In a case where the fits occurred daily, inhalations three times a day postponed them for 19 days. The night attendants upon epileptics at the West Riding Lunatic Asylum were now provided with the medicine, and instructed to administer it to any patient in whom they noticed the signs which experience had shown to be the precursors of a fit. To the surprise and pleasure of Dr. Browne, it was found that not only were seizures prevented by treatment of the prodromata, but that convulsions actually begun were nipped in the bud, cut short and arrested. In ten cases of the *status epilepticus*, eight have terminated in recovery.—*West Riding Lunatic Asy. Med. Report, 1873.*

A reviewer writes: "We may be mistaken, but we cannot help thinking that the nitrite of amyl is destined to work a revolution in the treatment of epilepsy."—*Amer. Jour. Med. Sci., July, 1874, p. 203.*

Jastrowitz found it useful in epileptic fits preceded by aura.—*Berlin Klin. Woch., Feb. 15th, 1875.*

Dr. McBride considers the nitrite particularly applicable to that form of epilepsy in which spasm of the cerebral arteries is the proximate cause of the fit. Those cases in which there is a distinct aura are the cases in which it promises most good. Epileptics not in hospitals should carry a small bottle of the nitrite with them, and when an aura is felt, it should be inhaled, and in this way the convulsion can usually be prevented.—*Chicago Jour. of Nerv. and Ment. Disease, Apr., 1875.*

Dr. H. C. Wood, Jr., controlled the convulsion in an epileptic by internal administration of this drug.—*Med. Times, Apr. 3d, 1875.*

M. Bourneville found it powerful to arrest an attack after the access of the aura.—*Jour. de Therapeutique, July 10th, 1875.*

TETANUS.

Mr. Foster administered the nitrite with complete success, in a case of traumatic tetanus, where the spasms were so severe that he is described as "having been rolled up like a rigid ball," holding the convulsions in check for the long period of nine days. It is curative in so far as it controls the spasm, *i. e.*, it prevents death, and so leaves time for recovery. Frogs under strychnine tetanus are immediately relieved of spasm by the nitrite of amyl, and with great care in keeping the animals free from spasm, they can be sustained until the strychnine is removed from the body, when there is recovery.—*Med. Times and Gazette, Oct. 22, 1870.*

A case of recovery is reported in the *Lancet* for 1871, Vol. 1, p. 572.

Funkel reports a case which had resisted the action of all the means hitherto applied, but which yielded promptly to the inhalation of two drops three times a day.—*Berlin Klin. Woch., Jan. 4, 1875.*

Dr. Forbes presented a case of acute tetanus from extensive burn, presenting marked opisthotonos, with trismus and a horrid tetanic grin; muscles of deglutition considerably involved, with paroxysms of brief and painful spasm, which were perfectly controlled by inhalation of nitrite of amyl, given in five drop doses twice a day for 46 days, progressing to complete recovery.—*Med. Times, June 12, 1875.* See also *British Med. Jour., Oct. 23d, 1875.*

MELANCHOLIA.

Dr. Höstermann found that after the inhalation of nitrite of amyl there seems to be a somewhat more permanent change for the better in the psychical condition of the patient. It is not suited to those cases where the melancholia depends upon some cause of exciting anxiety, but rather to the cases due to sluggish circulation and impeded nutrition in the brain.—*Wiener Med. Presse, Oct. 20, 1872.*

Dr. Schramm reports that a temporary favorable result was, with one

exception, seen in all the cases (nine). The practical result of his observations was that amyl-nitrite will relieve for a time the condition of melancholia and its attendant neuropathological conditions.—*Archiv. für Psychiatrie, Band v. Heft 2, 1875.*

Professor Trebaldi, believing that melancholia depends upon a diminished activity with an irritability of the brain, finds the inhalation of nitrite of amyl to be of signal service. In cases where stupidity and drowsiness are prominent symptoms, he finds that it produces effects like transient intoxication; in other cases where the patients had maintained obstinate silence, or, still worse, had refused to eat, he repeatedly broke the spell by its influence. So much confidence does he place in its power, that he advocates its use as a medico-legal test where refusal of food and mutism are simulated.

Rivista Sperimentale di Freniatria, Jan., 1876.
Dublin Journal of Med. Science, Mar., 1876.

Cephalalgia.

Dr. Lithgow states that he has been in the habit, since 1869, of using nitrite of amyl in nervous headaches, as recommended by Sir J. Y. Simpson; and where due care was taken in the selection of cases, he has never knew it to fail to produce entire and almost immediate relief.—*Lancet, Oct. 16, 1875.*

Hemicrania.

Du Bois Reymond, believing that certain forms of hemicrania, especially those associated with contraction of pupil on the affected side, were due to tetanic spasm of the arterioles and capillaries of the affected part, it occurred to Dr. Berger to employ amyl nitrite in a left-sided migraine of the most severe form. During a paroxysm of pain five drops were inhaled and the pain was immediately banished.—*Allgemeine Med. Cent. Zeitung, May 13, 1871.*

Dr. Connor treated with nitrite of amyl a case of hemicrania, attended with contraction of pupil of the affected side, which had usually lasted through the day, but which was cut short, with no unpleasant after symptoms.—*Detroit Rev. Med. and Pharm., 1872.*

Pick has collected evidence showing the value of amyl nitrite in hemicrania.—*Centralblatt, Dec. 6, 1873.*

Facial Neuralgia.

Dr. G. H. Evans used it successfully in three cases in anæmic patients. It took longer to produce the characteristic flushing, but as soon as the flush came the pain was relieved.—*Practitioner, Sept., 1875.*

Acute Bronchitis.

Dr. Kitchen found that the cough from congestion of the fauces and the whole respiratory tract belonging to acute bronchitis was more efficaciously treated by nitrite of amyl than by any of the ordinary medicines heretofore used.—*American Journal of Insanity, Oct., 1873.*

Trismus Nascentium.

Dr. J. V. Ingham witnessed a well-marked instance of the power of amyl-nitrite to control the spasms in this disease.—*American Journal of Obstetrics, Nov., 1875.*

Hysterical Convulsions.

Dr. Hinton reports a successful case.—*Med. Times, July 31, 1875.*

Cardialgia.

Dr. Fuckel reports that in all cases not complicated with gastric ulcer, the inhalation of a few drops was followed by the disappearace of the pain in a few minutes. The pain sometimes returned in half an hour or later, but it was less severe, and always ceased on another application of the remedy.—*Deutsches Archiv. für Klin. Med., 1874.*

Gastralgia.

Dr. Forrest reports the case of an Italian, who, during forty-two months, had repeated recurrences of exquisite pain at the epigastrium. All treatment proved unavailing. He was cured by two doses of nitrite of amyl, one and one-half and two and one-half minims.—*N. Y. Med. Journal, Feb., 1875.*

Colic.

Dr. Farquhar reports that in India he had seen a gentleman suffering from a kind of colic, paroxysmal in character, coming on at night, very terrible to the sufferer. The nitrite, as the patient expressed it, transferred him from agony to heaven in a moment.—*Clinical Society of London, Feb., 1870.*

Dr. Osgood has used it in two cases with success.—*Amer. Jour. Med. Sciences, Oct., 1875, p. 360.*

Cholera.

British Med. Jour., Sept. 30, 1871.
Indian Med. Gazette, May 1, 1873.

Dysmenorrhœa.

Dr. M. P. Jacobi recommends the administration of belladonna in ordinary doses for several days previous to the occurrence of the menstrual

flow, and when the pain comes to administer by inhalation two to six drops of nitrite of amyl, p. r. n. In one case a single drop of amyl was all that was required.

Dr. Sell had used it in one case, and in that the patient was completely relieved of pain.—*Med. Record, Jan. 2, 1875.*

Dr. Fuckel has used it with satisfactory results in the neuralgic disorders accompanying menstruation.—*Deutsches Archiv. für Klin. Med., 1874.*

Puerperal Convulsions.

Dr. Jenks used it in a case of post partum eclampsia, where its action in arresting the spasm was immediate and satisfactory. The uterus, previously well contracted, became loose and relaxed and he had a troublesome hemorrhage to combat.—*Med. Times, Aug. 1, 1872.*

Dr. Hinton had a case of primipara in convulsions, six hours after commencement of labor, with a rigid, undilated and undilatable os. Five drops by inhalation gave immediate relief, and no more convulsions appeared, though she had had four previously. The os dilated rapidly and a safe delivery ensued. It is only in the early stage of labor that the use of amyl is advisable.—*Med. and Surg. Reporter, Nov. 14, 1874.*

LEAD POISONING.

In every case of lead colic to which it was applied in Dr. Frank's treatment at the hospital in Cologne, the nitrite of amyl caused perfect and immediate cessation of the pains.—*Med. and Surg Reporter, Feb. 26, 1876.*

HICCOUGH.

Dr. Simon reports that a patient who had hiccoughed for twenty-six hours, and been subjected to various treatments without success, was relieved almost instantaneously by inhaling three drops of the amyl-nitrite.—*Chicago Med. Jour. and Exam., Jan., 1876.*

BLEPHAROSPASMUS.

Dr. Sander used it in a case where the eyes opened widely when the flushing appeared.—*London Med. Record, Aug. 16, 1875.*

VARIOUS FORMS OF SPASM.

Med. Times, Mar. 6, 1875.
Amer. Jour. Med. Sci., Oct., 1875, p. 360.

COLD STAGE OF INTERMITTENTS.

Dr. Hinton broke up the chill in a few seconds.—*Med. Times, July 31, 1875.*

AS A MEANS OF DIAGNOSIS.

Dr. S. W. Mitchell relates some suggestions as to how this drug can be made useful in deciding on the character of certain cases of head trouble in which there are attacks of vertigo, or disturbed equilibrium, or mere fullness, with or without mental disease.—*Med. Times, Mar. 6, 1875.*

SEA SICKNESS.

Dr. Clapham tried the nitrite of amyl in 124 cases; of these 121 proved eminently satisfactory, there being no return of the vomiting after the administration of the nitrite; the remaining three cases being only unsatisfactory so far as they required a further dose or two of the remedy. It produces a warm and comfortable glow, which takes the place of the chilly sweat so disagreeable in this disease, and this is usually followed in the course of half an hour by a pleasant slumber, from which the patient wakes to eat a hearty meal. It should be inhaled in the recumbent position, so as to insure the after sleep.—*Lancet, Aug 21, 1875.*

IN CHLOROFORM NARCOSIS.

In 1860 Dr. Bedford Browne had actual ocular demonstration of the action of chloroform on the physical operations of the brain, wherein he observed that as consciousness diminished, in a corresponding ratio there was diminution of vascularity of the brain, and as the mental powers would return the contrary would occur.—*Amer. Jour. Med. Sci., Oct., 1860.*

In 1870 Dr. F. A. Burrall said: "It would seem worthy of a trial in threatened syncope from chloroform, since the inhalation of but a few drops of the nitrite of amyl is followed by marked acceleration of the heart and flushing of the face."—*N. Y. Med. Gazette, June 11, 1870.*

In 1871 Dr. H. C. Wood, Jr., said that "the investigations into the action of nitrite of amyl strike a heavy blow at certain theories in regard to the cause of the action of anæsthetics. It has been asserted that the cause of anæsthesia was the fact that the drug prevented oxidation. Now here is a drug which appears to and does prevent oxidation, and yet the very last tissue to be affected is the brain tissue. The animal preserves its consciousness to the very end. Consciousness and sensibility are two of the last functions which are annihilated by the nitrite of amyl. —*Amer. Jour. Med. Sci., Apr., 1871, p. 424.*

Dr. Dabney found that in three out of four animals in chloroform narcosis, the amyl produced a decided increase in the frequency and force of the heart beats, and they recovered when death was apparently imminent. —*Richmond and Louisville Med. Jour., June, 1874.*

Dr. Schüller observed that nitrite of amyl not only quickly removes the effects of chloroform on the vessels of the pia mater, but in cases of advanced narcotism from the latter drug, it rapidly relieves the dyspnoea and labored respiration, and renews the strength of the pulse, while it restores the animal's reflex excitability in an astonishingly short space of time.—*Med. Times and Gazette, Dec. 12, 1874.*

Dr. Solger says the effect of chloroform seems to be antagonistic to that of nitrite of amyl. The vessels of the pia mater exposed in a rabbit under the influence of chloroform were seen to be contracted, while upon inhalation of the nitrite they became enlarged.—*Wien. Med. Presse, Feb. 28, 1875.*

Dr. Burrall again says: "Evidently, with these experiments of Dr. Schüller before us, science now demands that whenever chloroform is administered, the nitrite of amyl should be at hand, as one of the agents to be employed in case of impending danger."—*Med. Record, May 22, 1875.*

Mr. C. Bader, ophthalmic surgeon, Guy's Hospital, reports three cases, where, during operation, the dangerous and alarming effects of chloroform were instantly and effectually overcome by the inhalation of nitrite of amyl. I append the record of these cases because they are illustrative of the action of amyl, and because they are models of concise reporting.

Case 1.—Given a mixture of alcohol, ether and chloroform. Young man, hydrocephalic, inherited syphilis; iridectomized on both eyes; suddenly became pale, deeply insensible, with pulse and respiration very defective. Lint, with a few (three) drops of the nitrite of amyl was placed over nose and mouth. In two or three seconds a deep inspiration, followed by others, flushed face, quick pulse and return of sensibility were observed.

Case 2.—Given chloroform. A boy, pale, fat, blue lips and cheeks, became suddenly very faint (blue lips, blood turning black, breathing very imperfect). The same quick result, with vomiting, followed the inhalation of the nitrite of amyl (three drops).

Case 3.—Given chloroform. A middle-aged woman suddenly became blue in the face and stertorous (tongue falling back). Lint, with ten drops of the nitrite of amyl, was placed over mouth and nose. In a few seconds the blueness and stertorous breathing gave way to good color, regular breathing, sickness and vomiting, though no food had been taken for several hours.—*Lancet, May 8, 1875.* See also *Med. Times, July 13, 1875,* and *Detroit Rev. Med. and Pharmacy, Nov., 1875.*

This rehearsal of experience comprises the journalistic history of the therapeusis of nitrite of amyl. The cases recorded all tend to show its large application as a remedial agent. Whatever failures have been experienced have not found their way into print. I am aware that it has not met the expectations of some who have tried it in that class of cases where its usefulness has been most vaunted. The failures do not invalidate the successes. It is just possible that a certain inexperience and want of boldness in pushing the amyl to its physiologic effects may account for some of the failures.

MODE OF ADMINISTRATION.

The nitrite of amyl may be administered by the mouth in doses of from two to five drops on sugar. Dr. Sell's formula is given as one minim in a drachm of peppermint water every half hour.

Inhalation of the drug is the means most generally resorted to. From one to five drops may be poured on a towel, wool or blotting paper, or dropped into a cone of blotting paper, and held over the mouth and nose, so as to be rapidly inhaled with full inspirations. It may be gradually increased to 10 or 15 drops for a dose. The latter quantity is necessary after prolonged use, as, in all probability, amyl, like a narcotic, very easily sets up a habit of tolerance. Bourneville gave 60 drops in one case of hystero-epilepsy, with no other ill effect than the production of pallor, vertigo and headache, which lasted for some hours. One case is reported where an ounce was taken in nine days, and another case where 30 ounces were taken in six months.

For the purpose of having the remedy close at hand, and yet to avoid too great a quantity to be thrown upon the respiratory organs, Dr. Strassburg suggested dry charpie to be placed in a glass and the proper dose to be poured upon it. The vessel is then closed by a stopper and made absolutely air-tight with paraffine. The patient, when he feels any warning of the attack, can rapidly open the glass, and inhale the measured quantity without danger.

For epileptics Solger recommends the use of large capillary tubes, containing 3 to 6 minims each; these are charged with the nitrite and sealed at both ends; when required for use, one tube is folded in a bit of rag or broken up with the fingers, thus furnishing a sufficient dose of the vapor.

Mr. Lenox Browne recommends that the nitrite of amyl could be more easily and safely employed if it be previously diluted with an equal quantity of rectified spirit. Five measured minims of this mixture may then be safely given, which cannot be given if a less quantity be dropped from the bottle. The best method of inhaling it is from a cone of blot-

ting-paper made from a foolscap sheet twice folded—that is, four thicknesses of paper made into a cone. The effect of nitrite of amyl, as of aldehyde, ether or chloroform, is much more powerful if added to hot water and inhaled with steam.—*Br. Med. Jour., Feb., 1876.*

An inhaler for this drug is described by Mr. Smith in Braithwaite, Part. LXX, page 253.

The lips, nostrils, etc., should be guarded from direct contact, as vesication is apt to arise if they are not so protected.

Anæmic people can bear a much larger dose than those who are not anæmic.

PRECAUTIONS.

If used in puerperal eclampsia, it should not be given when the head has descended into the inferior strait, as its relaxant effect on the capillaries is likely to promote post partum hemorrhage.

It may be given indifferently whether the face is flushed or pallid during the paroxysm.

It is well to avoid it in aged persons or others who might be likely to have commencing degeneration of the minute vessels of the brain for fear of apoplectic accidents.—*Lancet, Mar. 5, 1870.*

The possible profound symptoms from an over-dose are cyanosis, followed by pallor, hallucinations of sight, amblyopia, headache, giddiness, respiration difficult or gasping.

Dr. Talfourd Jones reports having given it experimentally to some fifty friends and patients.—*Practitioner, Oct., 1870.*

Dr. S. W. Mitchell says: "I find physicians very timid as to this remedy, but, after much and long use of it, I have altogether lost the dread of it with which I began."—*Med. Times, Mar. 6, 1875.*

Dr. Lithgow states: "I don't think there is the slightest risk in its administration, but owing to the temporary palpitation of the heart produced in most patients, care should be taken in administering it in cases of organic heart disease. Should any excitement or other alarming symptoms arise, cold affusion to the head, face or chest, with a free supply of air, are the proper means to use, but I have never had occasion to do so."—*Lancet, Oct. 16, 1875.*

According to this experience, the nitrite of amyl is a relaxer of spasm in all involuntary muscular fibre; it possesses the power of lowering the arterial tension; it increases the expansive movement by relaxing the muscular walls of the arteries; it causes dilatation of the brain vessels and relieves hyperæmia of the spinal cord; it increases and maintains the temperature of the body.

It is primarily a remedy for spasmodic action ; where there is probable spasmodic contraction of the capillaries ; it acts promptly ; it is manageable, for the flushing of the face is usually coincident with the relief from pain, and suggests the withdrawal of the drug ; it does not act unexpectedly, *i. e.*, out of proportion to its dose ; it leaves no unpleasant sequelæ. *Its curative power depends mainly, if not exclusively, on its interruption of a pathological habit. It prevents death and so leaves time for recovery.*

If there be any disposition to criticise the positiveness with which such promptness and efficiency are claimed for one drug in such apparently incongruous diseases as epilepsy and angina pectoris, tetanus and sea sickness, hemicrania and intestinal colic, let it be recollected how *single* is the physiologic effect of the nitrite of amyl, and how unique its action on *one* pathologic condition.

"There seems to be in epilepsy some perverted nervous action, causing spasm of the contractile fibres of the cerebral vessels, and those also of the muscles of the face, pharynx, larynx, respiratory apparatus and the limbs generally. The loss of consciousness is probably due to the fact that, by contraction of the cerebral vessels, the brain is deprived of its free supply of blood."

" In some forms of hemicrania and headache, the pain is probably due to cerebral anæmia, the result of arterial spasm. In migraine and most neuralgias, there probably exists some imperfect nutrition of the nervous tissues, atrophic or anæmic. In such cases, it is probable that the increased supply of blood caused by inhalation of nitrite of amyl may supply the posterior roots of the implicated cerebral nerves with that pabulum which they need."

" Whether the contraction of the bronchial tubes in asthma is due to powerful innervation of the vagi or sympathetic, or partly to both, it is clear that there is muscular spasm of the air-tubes, and air will not freely enter the smaller tubes when they are greatly narrowed in calibre."

"In angina, during a paroxysm, the arterial tension, as shown by sphygmographic tracings, is increased, and when nitrite of amyl is inhaled, the arterial tension is diminished."—*Practitioner, Oct., 1871.*

It is a peculiar fact in the therapeutic history of this drug, that many of its applications to the relief of serious affections have been the result of *à priori* argument from its known physiologic effects.

For instance, in 1859, Dr. Guthrie proposed it as a resuscitative in drowning, suffocation and protracted fainting ; in 1870, Dr. T. Jones reported having used it with prompt relief in syncope.

In 1867, Dr. Brunton thought that by relaxing the spasm of the

bronchial tubes, it might be very beneficial in spasmodic asthma; in 1872, several experimenters testified to the accuracy of the prophecy.

In 1867, Dr. Richardson thought that, from its power of paralyzing both nerves and muscles, it might prove useful in tetanus; in 1870, Mr. Forster reported a case treated successfully.

In 1870, Dr. Burrall recommended it as likely to serve as an antidote in chloroform poisoning; in 1875, Mr. Bader reported three cases where he used it with prompt relief.

In 1870, Dr. Sanderson suggested it would likely act on the involuntary fibres of the intestines as on those of the vessels, and so be valuable in the multitudinous pains which depend on intestinal spasm; in the same year, Dr. Farquhar reported a most brilliant result.

In 1872, Dr. Mitchell suggested its probable efficiency in puerperal eclampsia, and Dr. Jenks used it, at his suggestion, with immediate success.

In 1873, Dr. Browne argued that, as at the commencement of an attack of epilepsy there was an intense contraction of the cerebral blood vessels, it might be of service in warding off the paroxysms, and the treatment became general in the hospital under his charge.

In 1875, Dr. Crochley Clapham, L.R. C.P.L., F.L.A.S., Ph.D., by comparing the similar congestion of the spinal cord in a man accidentally killed in the very act of vomiting with that of a patient who died in the epileptic status, thought that it might be advantageously employed in the treatment of sea sickness, and then made several voyages to test the fact, and found he was right every time.

It is not my province to indite the apotheosis of nitrite of amyl, but if this review of its physiologic and therapeutic literature; if its sharp outline of *one* physiologic effect and *one* therapeutic indication; if the not inconsiderable results obtained from it, in its very brief history of scarcely more than five years of active life; if its probable large remedial application, combined with its probable very small number of observers; if well-known learned and conservative men, not given to rhapsody, after seeing the results of its administration, can put themselves on record with such expressions as "violent and excruciating suffering repeatedly and instantly relieved," "from agony to a state of perfectly calm repose," "strangled," "bagatelles," "astonishing," "great success," "prompt and entire relief," "nipped in the bud," "destined to work a revolution"—if these do not prompt you to commit your other multitudinous spasm-appeasers to the cabinet shelves, whereon repose the relics exhumed from the dark, dank, subterranean passages of by-gone periods, at least I can plead them in justification for having occupied your time.

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Dr. Squibb remarked that the practice of administering the nitrite of amyl is drifting into the inhalation of small quantities from a small vial, the mouth of which is applied to one nostril; one to three full inspirations being sufficient. This small vial may be carried by asthmatics and others, in the vest-pocket; should be tightly corked; corks are rapidly rendered friable by the nitrite. This method is convenient and economical.

Dr. Squibb has information that the nitrite is being largely employed in the asylums of this country for the treatment of the epileptic insane. Dr. Kempster says that his epileptic wards have been revolutionized; they are less noisy, the seizures becoming comparatively rare, by reason of the power of the drug to anticipate and prevent them, where the aura is distinct, or to arrest them where there is no appreciable aura. The nurses are instructed in its use. As an explanation of the alleged curative effect of the remedy, Dr. Squibb suggested that it may cure by breaking up the epileptic habit, as appears in the case of other affections showing a periodic tendency.

Hyponitrous ether, the potent ingredient in the Spts. Ether. Nitrosi, appears to have the almost absolutely opposite physiological effect to amyl nitrite; it contracts while the latter expands the capillaries, it causes a blanched and shriveled look. This suggests its use in the event of over-intoxication by amyl. The commercial Spts. Ether. Nitrosi contains more alcohol than is required by the Pharmacopœia, and less of the ether; it therefore is frequently disappointing in the treatment of ephemera and the like; it is falling into disuse.

There appears to be very little danger fro n the use of amyl under any

ordinary circumstances. In the case of anæmic persons, by whom a larger quantity is required, it should be administered with caution. Beyond this particular, it is comparatively harmless. He had himself been exposed to vapor to an unusual extent, in consequence of the breakage of a pint bottle, and the necessity to remain and exert himself in an atmosphere heavily charged with the vapor, in order to prevent its explosion by coming in contact with a flame which was near at hand. The feeling of swelling of head and body, and a sensation as if about to fall, were extreme for a time, but passed off without ill effects; the sensorium was clear during the whole time of the occurrence.

Dr. Wight found in the paper of the President a fresh argument for that form of investigation which seeks to apply to therapeutics the knowledge gained by physiology.

Dr. Lamadrid (since the reading of the above paper), writes:

The night of the 21st of December, 1875, I was called to see Mrs. E. P., aged 39, who was laboring under one of her old and severe attacks of spasmodic asthma. I found her sitting at the edge of her bed, with her head and shoulders bent forward and suffering with the usual symptoms of that disease. I at once poured out four drops of the nitrite of amyl on a handkerchief and applied it myself directly under the patient's nostrils and told her to take long inspirations while I withdrew it at the act of expiration. In a few seconds all the characteristic and physiological action of the drug were manifested, such as flushing of the face, relaxation of the muscles, &c., &c., and with it the attack subsided. The inhalation was withdrawn altogether and after a while I ordered a draught containing some mild anti-spasmodic and a hypnotic, to prevent if possible a second attack that night. I called in the morning and found patient had slept all night and apparently was doing well the following morning.

Second case is that of Rev. F. O. P., aged 54, suffering under a severe attack of angina pectoris, coming on soon after severe mental emotion. When I first saw him I found his face was pale and haggard, and almost unable to speak on account of the intense pain accross his chest below the clavicle and shooting backwards toward the spine. On further inquiry I found he complained of a sort of numbness on his left side, beginning at the shoulders and running down to the very extremities of his fingers and toes; both hands and feet were cold. After the paroxysm was over he stated that his chest felt as though it was growing fast together to the spine or that some heavy object was pressing his two sides together. This is the third attack he has had, and during the second his physician had told him he had disease of the heart. On auscultation I

found such to be the case. My treatment at first consisted of a mixture of anti-spasmodics, such as Hoffman's Anodyne, Tinct. Belladonna and Morphia given together every hour till relieved, and stimulating liniments to the chest, etc.; also warm applications to the extremities. After taking three or four doses patient did not seem to improve any, so that I decided now to try the effects of the much spoken of nitrite of amyl, and so highly recommended in this affection. I administered it in the same way as in the former case, except that I increased this time the quantity to six drops, and that I had to use it twice before I succeeded in relieving the patient altogether.

The other case came under my observation through the kindness of Dr. Fowler, who invited me to see a case of diphtheria, in which he was to perform tracheotomy for the relief of dyspnœa. During the operation the child was noticed of a sudden to breathe hard, lips turned blue and face pale. Nitrite of amyl, which he always carries for such emergencies, was immediately applied under the child's nostrils (aged about seven), and its remarkably good effect was noticed at once. The operation was successfully performed to the end without any more unpleasant accident.

FATTY DEGENERATION AND PROGRESSIVE ATROPHY OF MUSCLE,

WITH MICROSCOPIC PREPARATIONS.

By G. A. Evans, M.D.

By request I present this evening for inspection microscopic preparations showing the characteristic points of distinction between fatty degeneration and progressive atrophy of muscle; and in order that they may be better understood, I have prepared this superficial review of the microscopic pathology of those affections which they are intended to represent.

Fatty degeneration of a voluntary muscle is initiated by the infiltration of an albuminoid substance; from which fine fat granules are developed, first making their appearance in the neighborhood of the nucleus. They arrange themselves in rows parallel to the longitudinal striæ of the fibres, giving to the primitive fibrillæ a glistening, beaded appearance. The granules gradually fuse together, forming thereby large ovoid fat cells. The walls of the sarcolemma contract together between them, thus providing their capsules. These finally burst, and their contents are absorbed. (*Zörster Pathologische Anatomie*, page 600.)

During the earlier stages of the transformation the muscle becomes pale, soft and easily torn, the primitive bundles diminish in volume, and the transverse striæ become less distinct. According to Rhindfleisch, the interstitial connective tissue becomes richer in protoplasm, and their cells are converted into fat.

There is a physiological fatty degeneration of muscle, the microscopic appearances of which are identical with those already considered. The muscles of reptiles during their winter sleep undergo a fatty transformation. In the spring the process ceases and a complete regeneration ensues.

The recently delivered uterus furnishes another good example of physiological atrophy.

Fatty degeneration is to be distinguished from pseudo-hypertrophy. In this latter affection there is a complete permeation of the muscle with fat, in which, however, the fibres do not appear diminished in volume, but only forced apart by rows of interstitial fat cells.

In progressive muscular atrophy the fasciculi appear at first swollen and œdematous, later they are found diminished in volume, pale and transparent, being most marked in spots where the diameter is notably diminished. The transverse striæ, although much less distinct, do not become entirely obliterated until the disease has made considerable progress, and when they, as well as the primitive fibrillæ, have finally faded away, long cylinders of sarcolemma are found, containing more or less pigment granules, which undoubtedly constituted the proper coloring matter of the dark sarcous disks, and are not, as many consider, fat granules. At this stage, however, fatty degeneration may make its appearance ; the connective tissue cells of the twisted and useless sarcolemma tubes, are probably directly converted into fat, which becoming finally absorbed, leaves nothing but a few pigment granules to indicate the spot where formerly normal nuclei existed.

These changes do not exist uniformly in all the fibres of the affected muscle. Intermingled with those which are atrophied and degenerated are fibres which have undergone little or no change. There is no lesion of the intermuscular connective tissue, and except in the last stage of the disease, fat cells are not found in a pathological quantity. Zörster claimed to have traced back "progressive muscular atrophy" to fatty degeneration.

Robin denies the existence of fat in an abnormal quantity.

In Aitken's "Science and Practice of Medicine," (3d Amer. ed., Vol. II, p. 90) is found the following : "The degree of change into fat is various. In some no fat can be found ; in others it is abundant, prob-

ably as an after degeneration." Duchenne believes that in this form of atrophy granulations are produced which ultimately become fatty, and he is sustained by the opinions of Virchow, Friedrich, Lebert and Cruveilhier. Rhindfleisch considers this affection to be a peculiar form of fatty degeneration. Trousseau declares himself incompetent to decide the question.

Bamberger and Recklinghausen (*Vienna Medical Press*, 1869, Nos. 27 and 28) found in two cases of progressive muscular atrophy a diminution in the volume of the fibres. Fat cells were also seen, but only in a small quantity, the presence of which they considered was due to an after degeneration. The nerve filaments running through the muscles were found atrophied and fatty.

In the preparations presented this evening illustrative of progressive muscular atrophy, you will observe no fatty degeneration of the fibres, and no fat granules, but at different points of the section useless blood vessels, empty sarcolemma tubes, and connective tissue, all undergoing fatty transformation, can be seen with perfect ease; and I think you will be able to convince yourselves that fatty degeneration in this affection is always an after and independent change, only making its appearance when the muscle has ceased to respond to nervous influence, or has disappeared.

Another form of progressive atrophy, called "essential muscular marasmus," is described in Trousseau's Clinical Medicine as follows:

"It consists of a uniform and gradual wasting away of the whole muscular system. Microscopic sections show a diminution in the volume of the fibres; the transverse striæ, however, are unaltered, and the muscle still retains its normal color." Only three cases are reported by this author.—(Vol. I, p. 297, Eng. ed.)

A CASE OF CHRONIC SYNOVITIS OF THE KNEE JOINT, TREATED BY ASPIRATION.

By N. G. Hutchison, M.D.

John B., aged thirty-three, applied for treatment at the Orthopedic Infirmary, Brooklyn City Hospital, on Sept. 28th, 1875, suffering with chronic synovitis of the right knee joint of ten years' standing. The patient was anæmic, his bowels costive, and it was with great difficulty that he managed to walk, even with the assistance of a cane, owing to weakness of the joint, as well as the position of the leg, which was

flexed to a considerable degree by the contraction of the hamstring tendons.

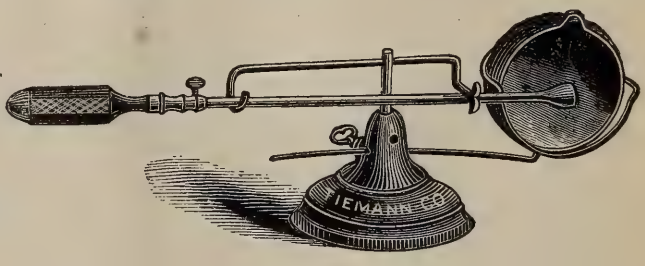
Upon examination, the presence of an abnormal quantity of fluid was readily perceived by its fluctuation, and by the peculiar shape communicated by it to the part, the patella floating on the subjacent liquid, and the capsule of the joint projecting distinctly above that bone. At the suggestion of the surgeon-in-chief, I immediately drew off, by means of the aspirator, ten fluid ounces of serum, and applied a bandage tightly about the knee. On Oct. 5th, one week later, he presented himself for the second time, the joint being again distended with fluid, but not to so great an extent as before. I again, by aspiration, drew off the fluid (seven fluid ounces) and applied a bandage as in the first instance. On Oct. 8th I saw him at his house, and found that a small quantity of fluid had reappeared, but the patient's general condition was greatly improved, his bowels being quite regular and his former anæmic appearance scarcely noticeable, although I had not prescribed any treatment for that condition, other than to regulate the bowels and order a nourishing diet. On Oct. 12th he again came to the Infirmary, the quantity of fluid being still small; but as he objected to the use of the aspirator at this time, unless it was deemed absolutely necessary, I determined to adopt the treatment so highly recommended by Dr. Erichsen, which is, as you are all aware, the internal administration of the iodide of potassium, and the local application of the mercurial ointment, as well as free use of the limb. The iodide was given in five grain doses three times a day and subsequently increased to ten grains. I ordered the ointment to be applied twice daily, and warned the patient to be exceedingly careful in the use of it, for fear of salivation. On the 15th of Oct., his wife called and informed me that her husband was sick, and, from the symptoms which she gave me, I concluded that he had become salivated, notwithstanding. I ordered the ointment to be immediately discontinued, and on Oct. 17th visited him, and found that he was suffering from ptyalism, as I had supposed. He had forgotten, he said, the directions given him, and had applied the ointment, not only over the joint, but to a considerable extent both above and below the knee. He had nearly recovered from the salivation and on Oct. 19th he was still better. I ordered him to continue the iodide of potassium, and increased the dose from five to ten grains, and, in addition, to take a walk daily, in order to give the limb a moderate amount of exercise. On Oct. 22d, I again saw him, and not only had all symptoms of ptyalism disappeared, but the synovitis was improved in a very marked degree, and he could walk without a cane for the first

time since the commencement of the inflammation ten years previously. Nov. 12th he presented himself, having walked without a cane from his home, a distance of rather more than one mile, in twenty minutes; and, from the manner in which he started off, after leaving my office, I had not the least doubt regarding his statement. He is able to work at his occupation, that of painter. On this day (Nov. 12th) I found that the swelling had subsided to such an extent that the right knee was scarcely larger than the left. No fluid appeared to be in the cavity and he suffered no pain whatever. He limped somewhat when he walked, owing to an inflammation which had affected his left hip-joint during infancy, and which had rendered him somewhat lame since that time; but so far as his right knee was concerned, it had improved so much that flexion and extension of the joint was quite perfect; it was free from pain and nearly normal in size. He had no appearance whatever of anæmia, and expressed himself as never having felt better in his life. I ordered him to discontinue the iodide of potassium, which he had now been taking for one month. Dec. 5th there was very little difference in the size of the two knees; no pain whatever about the joint, nor had there been since his previous visit. In fact, he was the picture of health in every respect, and I discharged him cured. April 18th, I may add that I have to-day seen the patient and found him in perfect health; no symptoms of inflammation having reappeared in the joint since his discharge, four months and a half ago. The chief point of interest in this case is the fact of the long continuance of the inflammation, notwithstanding the patient was under medical treatment during these ten years, which consisted principally in the local application of ointments and blisters, and of his speedy recovery under the treatment which I have described. I attribute this speedy recovery, in a great measure, to the aspirator, for, after the use of that instrument, the quantity of fluid which reappeared was always smaller than before the operation. Next in importance, in my opinion, was the free use of the limb, for, after having walked daily for one week, the contraction of the hamstring tendons was overcome to a great extent and continued gradually to improve. It was my desire to employ aspiration and free use of the limb, without resorting to any other remedies, but, at the urgent request of the patient—he having the greatest repugnance to the use of the aspirator—I discontinued the use of that instrument before the fluid had entirely disappeared. The iodide of potassium and mercurial ointment may have contributed to the cure, but I cannot resist the conclusion that, as the disease had so long withstood the use of internal and local remedies, the prompt and complete recovery of the patient was due

largely, if not entirely, to the relief of pressure afforded by aspiration. Mr. Lister claims that chronic inflammation of joints is kept up by the presence of fluids in the joints, and practices freely opening joints and the introduction of drainage tubes, using his antiseptic dressings. The case here reported shows that the same object can be obtained by a much less formidable operation than laying open the joint appears to be, even with the use of the antiseptic method, which is so favorite a practice with the distinguished Edinburgh surgeon.

A NEW SPRAY-CAUTERY.

Dr. Jarvis S. Wight applies the above name to an apparatus devised by him for the heating of cautery-irons. The ordinary two-bulb atomizer is used to throw a spray of alcohol, or some other inflammable liquid, which, being ignited, produces a jet of flame sufficiently hot to bring the irons to a red heat in a few minutes. Richardson's spray-producer may be employed in like manner, but it is somewhat less manageable, and the spray is less fine than in the case of the ordinary atomizer. A crucible is so arranged that it acts as a reflector, or reverberator, at the point of the iron, as it rests on the cautery-stand, as shown in the cut. The amount of alcohol varies necessarily with the size of the iron to be heated; a half-ounce is sufficient to heat Sims' medium sized iron. The operation of the apparatus was fully exhibited to the society.



Dr. Squibb, in the discussion following, referred to an instrument for heating cautery-irons, that was exhibited to the State Medical Society, two years ago. It was constructed on the same principles as this devised by Dr. Wight, only far less easily controlled by the operator. It was simply what has been long known and used as the Eolipile; it had no reflector for the heat. Dr. S. asked Dr. Wight whether the reflector was necessary or useful, and the reply was elicited that it probably gave a greater degree of heat and in less time. Dr. S. suggested that the cauterizing iron be placed in a porcelain tube, open at both ends, and the stream of flame be driven through the tube, so as to get the effect of a reverberating furnace, instead of that of a reflector, and that the stream of spray might

be much diminished with as good effect. As the actual cautery is generally used with anæsthesia, the noise is not a serious objection.

Dr. Shaw: In the treatment of nervous diseases the cautery is frequently, if not generally, applied without anæsthesia; it is believed by Brown-Séquard, Seguin and others, to be more effectual thus administered. Therefore it is desirable to use some form of cautery-heater that is comparatively noiseless—more so than that exhibited by Dr. Wight—in order that no additional repugnance and dread be excited in the minds of patients. A brass rod and an alcohol flame is ordinarily sufficient for the treatment of this class of cases.

PATHOLOGICAL SECTION.

Perforation of the Intestines.

Dr. Chas. Jewett reported the case of W. H., a well-nourished boy of 14 years, who had always been healthy, was suddenly seized Feb. 22d with vomiting. Subsequently had slight abdominal pains till evening, when I was called to see to him. I found the pulse and temperature normal and prescribed a mild opiate. The boy spent the evening in company. During the evening had a somewhat doubtful chill, complained of feeling cold on exposure to a slight draught of air, and did not for some time get warm.

Twenty-four hours later was again summoned to see the patient. Pulse and temperature now slightly elevated. Colic pains and tenderness on percussion over abdomen, especially about the umbilicus and right iliac region. Bowels previously regular had not moved for 48 hours. No evidence of intestinal obstruction; no history of injury. Suspected perityphlitis, but could find no physical signs of effusion about the cæcum. Ordered the patient to bed, and prescribed sol. morph. magend. one to thirteen drops hourly, or enough to keep the respiration between 12 and 15 per minute.

During the following week, the maximum temperature was 102° Fahr., the minimum 98½°. Slight tympanites developed and gradually subsided. Sol. morph. continued as above through the week in diminishing doses. Patient took nourishment well and steadily improved till the 28th. He then suddenly became worse. There was marked dullness, almost flatness, on percussion, and great tenderness in left iliac fossa. Occasional vomiting. Five or six drops per hour of Magendie's sol. were required to control the symptoms.

Feb. 29th, Dr. J. C. Hutchison was called in consultation, and subsequently attended the case with me through the sickness. Advised sol. morph. continued, and application of atropiæ oleas over the left iliac region, where slight induration could now be felt through the abdominal walls. As obstruction was suspected, injections of warm water were cautiously attempted. The injection of even two or three ounces of fluid greatly aggravated the pain and vomiting, and this treatment was discontinued.

During this, the second week of the attack, the temperature varied from 101° to 103°. Tympanites steadily increased, till the distension became extreme. Vomiting continued at irregular intervals, and toward the end of the week was two or three times of a stercoraceous character. Administered sol. morph. Mag. six to eight drops hourly through the week. At the beginning of the third week the tympanites slightly diminished, and the pulse and temperature began to decline. Stomach quieter and appetite better.

Injections were again tried, and from one to three pints of warm water were repeatedly thrown into the colon through a rectal tube (a Jacques' flexible catheter). Occasional injections were also used of ol. terebinth, two drams, ol. ricini, one ounce, all to no purpose. Two or three days later, the patient had thin, copious, consistent stools. Within twenty-four hours thereafter the pulse and temperature again rose. The tympanites, which had diminished but little, again increased, and vomit- was again renewed.

March 15th. Again two natural stools. Sol. morph. had been gradually increased to from ten to twenty-five minims per hour. Death by exhaustion on the 18th.

Autopsy twenty-four hours after death. Present Drs. Rushmore and N. G. Hutchison. The peritoneum was studded with ecchymoses, the visceral portion everywhere injected. Intestines matted together by membranous adhesions. Coils of small intestine in left iliac region firmly bound to colon at the beginning of the sigmoid flexion. At this point was a perforation of the colon of three or four lines diameter, from which consistent fecal matter was oozing into the peritoneal cavity. Another perforation of about the same dimensions existed in the ileum near the cæcum. This perforation was distinctly excavated upon the peritoneal surface of the intestine. A third perforation, much smaller, was found in a portion of the ileum that was adherent to the colon. The pelvic cavity contained several ounces of pus that had evidently gravitated from the left iliac fossa, and occasional flakes of fecal matter bathed in pus. Cæcum and appendix intact. The mucous surface of the intestines so far as

examined was healthy, except the perforations named. Mesenteric glands not enlarged, except very slightly in vicinity of the perforations. Lungs healthy.

The interesting inquiry in this case is, Were the perforations secondary to the peritonitis?

The regular monthly meetings of the MEDICAL SOCIETY OF THE COUNTY OF KINGS are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The MAY meeting will be held on the 16th, at which time there will be presented the following papers:

The Diapedesis of Leucocytes and its present pathological significance, illustrated by microphotographs, by Dr. N. B. Sizer.

Infantile Syphilis, a report of cases by Dr. H. N. Read.

A new instrument for the treatment of Urethral Stricture, with cases, by Dr. C. H. Giberson.

An Epidemic of Measles, by Dr. L. S. Pilcher.

The Electrolytic Treatment of Nævi, by Dr. G. M. Beard.

EDITORIAL NOTES.

——THE HEALTH OF BROOKLYN.—With the opening of May, the lease of life of many will be renewed. Our city's health, as judged by the most recent weekly bills of mortality, is still heavily under the domination of the zymotic affections, although their mid-winter grip and ferocity have been relaxed. It is especially good to see the small-pox mortality declining; in the last report at hand there were five fatal cases. It is a temptation to say *only* five cases, but that is a qualifying term that is inapt as applied to pestilential disease; it calls to mind the day when an expression like this appeared in an official document: "The cases here reported as small-pox were chiefly *nothing but* varioloid." "Only" and "nothing but" are scarcely pertinent to the variolous incident, to yellow fever and the like. A single "mild" case may stand like a rubricate initial at the head of a long chapter of woes. Diphtheria appears to retire reluctantly, while scarlatina does not recede at all. Whether this latter disease is more prevalent, or only more virulent than usual, we cannot say, as the means of comparison, *i. e.*, the reported cases of contagious diseases do not accompany the printed summary. Dr. Stuart, the Registrar, we are informed, has in hand a new form of statement which will better facilitate such comparisons. Consumption and pneumonia—the semi-zymotics, guardedly speaking—appear to feel the mollifying

effects of the season very little as yet. The population of the city being estimated at a half million (as is warranted by the results of last year's state census) the present monthly death-rate stands about twenty-four in each thousand living, an indication of improving public health.

——The Modern Spoon.—A generation ago, the drachm and the teaspoonful were nearly identical; at the present time the latter has attained the capacity of nearly two drachms. The dessert and table-spoon have in like manner expanded—not so much, perhaps, to correspond with an increase in the size of the Anglo-Saxon mouth, as from the introduction of plated ware and the competition among designers. This change of capacity is too important to be longer overlooked by the medical profession, and it would be well if every family were called upon to make use of a graduated glass in the administration of liquid remedies. So doing, it would less frequently be found that a prescription designed to last a week had been used up in five days or less. It is the opinion of a certain English coroner's jury that the death of a young infant was attributable to "congestion of the lungs, accelerated by an overdose of opium, innocently administered by the mother from a modern teaspoon containing two drachms, instead of a spoon of older date containing one drachm." In the good time coming, when the metrical system shall be adopted, if not before, the old-fashioned drop and spoon doses will be discarded for more exact methods.

——New Remedies.—A Berlin journal emphasizes the fact that there are two isomeric mononitrobenzolnaphtylamides, one of which, by the action of hydrogen, yields monoamidobenzonaphthylamide, the other hydrobenzodiamidonaphtalene. Either of these bodies, if treated with monomethylprotocatechnic acid, is liable to produce an explosion (of cachination.)

——Sanitary Publications recently issued.—One, "The Sanitary Drainage of Houses and Towns," by Geo. E. Waring, treats of some phases of the sewer-nuisance and its remedy. We have hitherto been so dependent upon foreign writers in this field, that an American book is welcome. A second is a reprint by Campbell, of Boston, of "Filth Diseases and their Prevention," by John Simon, F. R. C. S., the Sanitary Superintendent of England (to give him a new but descriptive title); it is prefaced by a note signed by the entire Mass. State Board of Health, endorsing the book and recommending its perusal to "all persons."

——Publications Received.—A new form of Visiting List, conveniently shaped and arranged, from Dr. R. Walsh of Washington. Price

$1.50. The New York Medical Journal, for April, contains three pages of reports from the Brooklyn Pathological Section. Also, an article on galvano-cautery, which recognizes the precedence in this work of one of our members; only he is dimly generalized as "Dr. John Byrne, an American physician." We know him better as Surgeon to St. Mary's. Marine Hospital Service in 1874, by J. M. Woodworth, M. D., Supervising Surgeon. The Climate and Diseases of America, during The Revolution (Dr Schœpff); translated and annotated by J. R. Chadwick, M.D. A centennial *brochure* of great interest and beautiful workmanship. Memorials of Harvey, collected and edited by J. H. Aveling, M.D.

——The abuse of Medical Charities by the laity as well as by the profession, so frequently complained of, finds expression in the following note:

To the Editor:

The surgeons of the Eye and Ear Hospital, 208 Washington St., between Tillary and Concord Streets, find that physicians occasionally send patients to this institution who are able to pay for treatment elsewhere. The hospital is for the benefit of the poor exclusively. No one is treated who presents a respectable appearance, unless he gives an assurance of his inability to pay. The poor receive all that the hospital is able to give.

One of the Medical Staff.

——At St. Peter's Hospital an out-patient department, or dispensary, has been in operation about two months. The physicians who have been appointed to this service are Drs. Gerster, Talcott, Corbally and Bristow.... Dr. W. B. Matson, after a competitive examination, received an appointment of Assistant House Physician and Surgeon in the same hospital. He has been assigned to the duties of the resident surgeon.

——The Central Dispensary has sent us its twentieth annual report, covering the year 1875. This institution, begun so modestly and run so unobtrusively, is making for itself an enduring record. Its annual class amounted to over seven thousand patients, an increase of a thousand over 1874. Its daily classes overflow the accommodations; at a chance visit a month ago, we found the halls and stairways, as well as the rooms, so choked with the poor, sick folk, as to make locomotion difficult. It deserves, if it were possible, a share of the huge new armory near at hand; or, at all events, more commodious quarters somewhere.

——An Invitation.—Dr. P. L. Schenck, Medical Superintendent of the Kings County Hospital, extends an invitation to those interested in

surgery, to visit that institution on the days of operations. Notices will be sent to those who will make known to him their desire, sending name and address.

——Dr. Horatio S. Smith, a member of this Society, died at his residence, corner Clinton and Harrison Sts., Thursday, April 27th, in the fifty-sixth year of his age.

——Dr. Carlos F. MacDonald has left Brooklyn in consequence of his appointment to the responsible position of Superintendent of the Asylum for Insane Convicts at Auburn. The Flatbush *Gazette* says: "Dr. MacDonald, it will be remembered, was for some time Superintendent of the Insane Asylum in our village, and was driven to resign because of the interference with his duties by a matron. His appointment to Auburn is an endorsement of his ability as an asylum superintendent."

——A Leader Fallen. On the 15th of March, after an illness from acute tuberculosis lasting four months, the world was poorer by the death of Edmund Alexander Parkes. One of his intimates thus speaks of him: "In the combination of moral, mental and physical beauty Dr. Parkes was, to my knowledge, never equaled, to my belief cannot be surpassed."

——The English Medical Schools have the reputation on this side of the water of being eminently practical and progressive, at least so far as they can be under a system of tuition almost exclusively given by lectures. This system is now being made the subject of criticism: the *Student's Journal and Hospital Gazette* finds that 40 to 80 per cent. of students of these schools are "plucked" when they try to pass the examinations of the Royal College of Surgeons and other examining bodies. These bodies, it claims, have improved the mode of examination, in accordance with the practical progress of the times, while the mode of education remains about the same. The students are neither better nor worse than those who formerly passed in larger proportion; they need teachers to properly direct their study: their instruction should have more of demonstration, "and the cut-and-dried lecture which has done duty for successive generations"—including, it might have added, the ancient anecdote, the perennial *lapsus* of the "*vis a tergo* from behind," and the like—should be dispensed with; the distance between the teacher and the taught should be lessened.

——Subcutaneous Osteotomy. Lately, at the London Hospital, Mr. Maunder has practiced section of bone with chisel and mallet in three instances. In each case the femur was the bone divided; in one case, an adult,

slight suppuration occured, while in two, a child and an adult, primary union took place. The shaft of the femur was divided to remedy distressing deformity, and the patients are now in a position to become useful members of, rather than remain burdens on society.—*The Lancet.*

——The current volume of the *London Practitioner* opens with a genial, glowing tribute to its former editor, the late Francis Edmund Anstie, copies of which have been largely circulated from the American office of publication, as a means of attracting subscriptions; a fine steel-plate portrait accompanies that number. When it was announced that Dr. Anstie had ceased to be mortal, the event was regarded with sorrow by hundreds in this country who had never seen him. We loved him for his works' sake. The affection here entertained for him is particularly noted in the memoir above mentioned—it is from the pen of his brother-in-law, Dr. Buzzard. "It is a fact that he was extremely popular amongst his professional brethren both in the United States and in Canada, although he had never crossed the Atlantic. They only knew him through his essays and books, but they appear to have estimated his qualities very highly indeed. In illustration of this I may mention now, though the matter was kept a secret at the time, that Anstie, in the last year of his life, received pressing and repeated invitations to occupy the chair of medicine in one of the best known and most important medical colleges in the United States. The temptation was a powerful one, for Anstie had a strong liking for his transatlantic brethren; but family circumstances especially served to influence him in rejecting an offer which to his mind conveyed the greatest honor that he had ever received. And here let me add another incident—touching in its *naïveté*—which was warmly felt by him to whom the compliment was paid. A doctor of the United States, powerfully attracted by Anstie's writings, by which alone he knew him, and having, as he wrote, "no child of his own," persuaded a patient to have her infant baptized in the name, "Frank Anstie!"

——The Sirop-Gibert is the name given to a mixture which is now a favorite Parisian hospital remedy for syphilis in all its stages. It is made according to a formula used by Prof. Gibert, as follows: take hydrarg. biniodid., 1 gramme; potassii iodid., 50 grammes; aquae, 50 grammes. Mix, dissolve and filter, then add syr. simpl., 2400 grammes.

The dose is a table-spoonful. This is called "the mixed treatment" in contradistinction to the plan of M. Ricord, which consists largely in employment of pills of the proto-iodide of mercury. The mixed plan is regarded as safer and more manageable.

——THIRTEEN MEDICAL SCHOOLS in the United States, in the spring of 1876, bestowed sheepskins on 1,152 new disciples of Esculapius. The schools of New York city are responsible for 385, rather more than one-third of the whole phalanx—Bellevue leading as usual; Philadelphia launches 270, less than one-fourth. The New England schools are not included.

——DR. ABRAHAM JACOBI, of New York, and Dr. E. R. Squibb are expected to read papers before this Society, at a special meeting to be held the 13th of June.

——THE OYSTER is and has been very generally believed to be unfit for food during the spawning season—during the months that have no R in them—chiefly because of its tendency to produce intestinal irritation. It is now alleged that the oyster out of season will produce a mild form of typhoid. The town-commissioners of Douglas, Isle of Man, have investigated an epidemic of that kind occurring on the island last summer, and trace the disease to the eating of spawning oysters. These commissioners intend to ask for legal enactments which shall prevent the vending of the bivalve while its generative function is in activity.

——THE MICRO-PHOTOGRAPHY of the blood in health and disease is a subject, developed by Dr. Cutter, of Cambridge, which promises to yield most interesting results. The objectives made by Tolles are of such powers as to give the white corpuscles a diameter of nearly ¾ of an inch.

——THE MASSAGE-TREATMENT, with which the name of Dr. Mezger, of Amsterdam, is commonly associated, is favorably considered in a paper by Prof. Billroth. He acknowledges the skill of Dr. M. and his success in the appropriate cases. Although this practice has been and continues to be employed and almost monopolized by quacks, as among the bone-setters in England of the present day; and although it is addressed with remarkable results to hysterical, neurotic and chlorotic females, it is not to be regarded as a mere "psychical" or quack remedy. Prof. Billroth has used massage in his clinic, assigning all proper subjects to an experienced assistant to be manipulated; the results of which have been remarkably favorable and far beyond expectation.

——THE TREASURER asks the *immediate* attention of the members to the annual dues. The rates have been reduced to so low a figure this year, that it is inexpedient to employ the customary collector. Sealed envelopes containing money can at all times be left at his office, and will be duly acknowledged by mail or otherwise.

——MAY REMOVALS.—Members of the Society who have changed their residence will please notify the Secretary at once.

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(1874 to 1878.)

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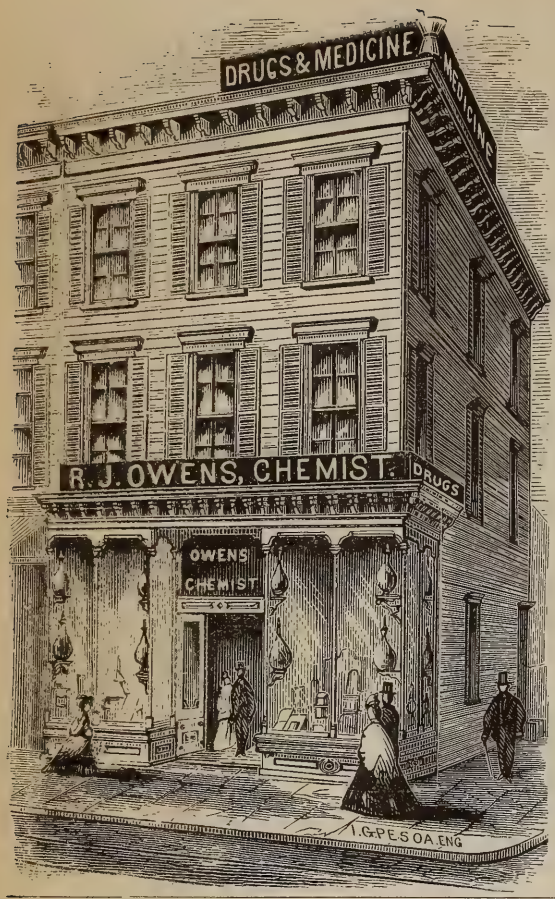

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, MAY 16, 1876.

THE DIAPEDESIS OF LEUCOCYTES, AND ITS PRESENT PATHOLOGICAL SIGNIFICANCE.

BY DR. N. B. SIZER.

Prior to the investigations of Virchow, the condition of Pathological Histology was most unsatisfactory; hypothesis was substituted for fact, and theory for observation.

The phenomena of inflammation especially were ill understood; pus was found in a wound or abscess, and its presence was accounted for by that "opprobrium scientiæ," Spontaneous Generation, which, let us hope, has now found its "last ditch" among the "bacteria."

Waller, in 1846, had indeed observed and recorded the emigration of white blood cells, but it appears that his article attracted no notice, and lay buried for years in the pages of the Philosophical Transactions.

While we admit Virchow's distinction as the founder of the new pathology, others undoubtedly labored to prepare the ground before him.

Schleiden and Schwann had established the place of the "cell" for both animal and vegetable life, and had clearly defined its position as the "essential morphological unit," to quote an expression of Koelliker.

Reichert, Remak and Koelliker, while studying the segmentation of the vitellus, had proved that in the embryo, as well as in the adult, no cell is derived from a "blastema," since all are descendants of the cells of the blastoderma.

From this time forward the cellular theory has been sharply defined and demonstrated by researches in normal Histology and Embryology. Pathology alone clung to the Hunterian dogma of "plastic exudation" to explain the rationale of morbid processes.

Two notable exceptions may be mentioned, however. Goodsir, of Edinburgh, as far back as 1845, insisted upon the activity of cells in inflammation, and was the first to employ that happy metaphor, "cell districts." Kuess of Strasburg showed, about the same time, that inflammation could be excited in non-vascular tissues, and hence concluded that the *essential* phenomena occurred in the tissue elements themselves, the vessels being of secondary importance. But Kuess combined much error with some truth, and imagined inflammation to be the melting down of normal cells into an amorphous liquid mass, in which the so-called "inflammatory globule" appeared, followed by cicatricial fibres.

In 1851 Virchow's first publications on the connective tissue group appeared, in which he showed that a cell belonging to any class of this group may undergo metamorphosis of both form and chemical composition, so as to transfer it to any other class of the group, and that the same is true of the inter-cellular substance; it may change its amorphous form, and become fibrillar, striated, or reticular.

Inflammation, according to Virchow, is proliferation of the connecting tissue cells, which, under the stimulus of irritation, swell, draw in their processes, and give birth to a brood of soft, young, round cells, with a vesicular nucleus, thus resembling in every respect the embryonic cells from which the parent cells are descended. These young cells are endowed with a high degree of activity, and undergo rapid evolution, changing in some places into pus, elsewhere becoming cheesy or tubercular infiltration, or, undergoing a high degree of development, appear in varied form as neoplasms.

There are, then, no such things as "specific cells;" no element of a tumor can be considered as specific, as having a form whose prototype cannot be found amongst normal tissue elements, because the abnormal cells are descended from normal cells.

This fact takes away every histological argument from those who imagine that disease is a parasite grappling with and living on the economy.

While arguing the question on merely histological ground, Virchow has been able to prove that all morbid processes set in motion the same cellular activity as physiological phenomena, but always with this memorable difference; the abnormal activity manifests itself either in a turbulent fashion, irregular, tumultuous (if I may use the expression), or out of its proper place (heteropic), or at an improper time (heterochronic).

Since Virchow's first publication, many improved methods of observation have been of essential service in elaborating his views. Especially is this true of the art of preserving cell life for many days by Iodized serum and other indifferent media, with Schultze's warmable stage, and Von Recklinghausen's moist chamber. Stricker's gas chamber and Harting's apparatus are of great service, when we desire to expose living tissue elements to the action of electricity and the various gases while under the microscope.

Through these means we know that Schwann's idea of a cell must be essentially modified, that neither cell-wall nor nucleus is a *sine qua non ;* that a cell in its simplest form is merely a particle of that homogeneous, jelly-like material called Protoplasm.

Another important point is the "automatic" action of cells, that is, many of them possess the power of independent movement, and this fact brings me directly to my subject, the Diapedesis of Leucocytes.

The word "Leucocyte" was invented by Robin, of Paris, to designate all those colorless cells otherwise known as pus, mucus, lymph, chyle, and white blood corpuscles, which we know are impossible to be differentiated from each other under the microscope.

If the cornea of a living frog be quickly excised, placed in an indifferent medium in a "moist chamber" under an immersion objective, we may be rewarded by our first sight of that important element, the wandering connective tissue cell. We find a few isolated, pale, glistening bodies, round or irregular in form, and after some minutes of close watching we may easily satisfy ourselves that these bodies are constantly protruding and retracting delicate pseudopodial processes, and slowly moving about through the tissue. These are Recklinghausen's famous "wandering cells." After half an hour's waiting the fixed corneal corpuscles appear as very pale, dull spots, more or less stellate in shape, touching each other at the tips of the radiating processes. These cells exhibit under ordinary circumstances no movement whatever. The movable cells are identical in *shape, size, appearance* and *amœboid motion* with the leucocytes, and may be demonstrated in many tissues in the same way.

The researches of Cohnheim, of Berlin, have attracted the widest attention, and bid fair to revolutionize our notions of pathology. In his paper in *Virchow's Archiv* (Band 40, Seite 1, 1867, "Ueber Entzuendung und Eiterung"), he describes his experiments nearly as follows : A frog having been paralyzed with Woorara, a small incision is carefully made in the abdomen, and a loop of intestine gently drawn out, great care being taken not to compress the vessels in the wound. The mes-

entery is then examined with a high power objective, and the irritation of the air being sufficient to arouse it, we soon begin to observe the phenomena of inflammation.

We notice the increased rapidity of the current, the crowding of the blood cells into the dilated capillaries, the gradual production of "stasis," and the so-called "still-layer" of leucocytes adhering to the inside of the wall of the vessels. By careful watching we notice that the connective tissue between the vessels is rapidly filling up with wandering cells, whose numbers increase continually, as they glide along in all directions, protruding and retracting their pseudopods.

If we are blessed with patience we may see the emigration of a leucocyte. A member of the adhering "still-layer" pushes out a process against the vascular wall, its tip passes through the wall and protrudes outside. The cell-protoplasm appears to run into the process until the cell is dumb-bell shaped, half being inside and half outside of the vessel. The intra-vascular portion decreases, while the extra-vascular portion increases in size until the whole of the cell is outside the vessel, and finally detaches itself entirely, and glides away, a wandering cell, through the tissues.

Like their prototypes, the Amœbae, these "vagabonds" appropriate any colored granules in their track, and may thus be marked, or "stuffed," as our German friends call it. If we have previously injected small quantities of water containing cinnabar, carmine, or aniline-blue, into the subcutaneous lymph-spaces of our frog, we shall find the "still-layer" in the mesentery containing many leucocytes, with colored particles in their interior. They can thus be easily watched while emigrating as "pus cells" into the tissues.

Those who take the most advanced ground on the emigration side insist that *all* pus cells, alike in non-vascular and vascular tissues, are either emigrated white blood cells or their descendants, as they have been observed to proliferate rapidly after emigration. Stricker, of Vienna, and others, have claimed that in non-vascular tissues, and perhaps occasionally in others, pus *may* also be formed by the proliferation of connective tissue cells.

In 1862, Von Recklinghausen demonstrated an internal epithelium lining lymphatics, by the use of silver staining. In 1863, Oedmanson, of Stockholm, applied the same method to demonstrate pavement epithelium elsewhere in the tissues, and in 1865-6, a similar endothelium was described and demonstrated in the blood capillaries by several observers.

Specimens, successfully prepared and stained by carmine, show the

capillaries lined with a single layer of spindle-shaped epithelial cells, each having a nucleus stained with carmine, the cells arranged side by side like pavement epithelium, the inter-cellular sutures being stained black with the silver, and the cell-body being unstained.

Here and there we notice irregular, rounded forms in the sutures, unstained either by silver or carmine, and standing like transparent islands in the black-stained seam, recalling at once to our minds the Wormian bones of the cranium.

These are the so-called stigmata or stomata, varying in diameter from $\frac{1}{400}$ to $\frac{1}{150}$ of a millimeter, and are supposed to be the openings by which the cells emerge. Sometimes the stomata also are blackened by the silver, but the cause is not known.

Since Cohnheim's first publication, the fact of Diapedesis has been established independently by so many investigators, that it is generally conceded on all sides that migrated leucocytes make up the greater part of the pus of an inflamed spot, but the exact mode of transit is still in doubt.

Cohnheim's original idea was that the cells passed through by their amœboid movement alone, but he now thinks that Hering and Schlarewsky may be justified in comparing it to the dialysis of colloids.

In a later work (1874) Cohnheim calls attention to a condition first pointed out by Lister, viz.: an altered, softened, more porous condition of the vascular walls in inflammation, so that a slight increase of arterial tension would suffice to force out the contents of the vessel. This, however, is a minor point; the important question being, Are *all* pus cells emigrants, or are *some* proliferated connective tissue cells?

Stricker and his side have great difficulty in establishing their view; for example, the frog's tongue is easily examined and abounds in connective tissue cells, but no very marked changes can be seen in them during inflammation.

"Stricker," says Cohnheim, "observed this object *ten* hours consecutively, and rose from his microscope having observed not a single cell division, not even a progressive constriction in any cell."

Stricker ascribes this failure to the tardiness of proliferation, and obscuration of the field by the crowding of migrating cells into the part inflamed. He has therefore abandoned the tongue and betaken himself to the cornea, in which he thinks he has observed (in conjunction with his pupil, Dr. Norris. of Philadelphia) the proliferation of the stellate corpuscles, and the formation of pus cells. ("Studien aus dem Institut fuer Experimentelle Pathologie in Wien, aus dem Jahr 1869.")

Keratitis being excited in several frogs, the corneae are excised at inter-

vals, stained with gold ter-chloride to render the corpuscles visible, as well as any changes which they may have undergone.

Keratitis may be excited in various ways : the Lapis Infernalis or actual cautery, incision, a seton inserted in the cornea, or passed through the globe of the eye, and setting up Panophthalmitis with secondary Keratitis.

The changes according to Stricker and Norris are described by Burdon-Sanderson in Holmes' System of Surgery, Vol. V, art., "Inflammation," as follows : After a few hours the corneal corpuscles draw in their processes, and in sixteen hours they swell up, and nuclear division goes on rapidly, the corpuscles assuming the form of those large nucleated masses of protoplasm, the so-called "giant cells" of Virchow, the "plaques à noyaux multiples" of Lebert.

Further observation is prevented by the crowd of migrating cells flocking in from the limbus.

Following Cohnheim's description of this process, the corpuscles do not proliferate, but after drawing in their processes they rapidly undergo degeneration, their protoplasm becomes granular, and many vacuoles appear in it. The nucleated "giant cells" are merely the result of the aggregation of many wandering cells. In Keratitis secondary to Panophthalmitis, *no change whatever* occurs in the corneal corpuscles, they not even draw in their processes.

Cohnheim's views have received powerful support from the researches of Prof. Axel Key and Dr. C. Wallis of Stockholm, published in Virchow's Archiv, Band LV. They have examined Keratitis in several hundred frogs, and coincide with Cohnheim in every important particular.

Prof. Boettcher, of Dorpat (in Virchow's Archiv, Band LVIII, 1874) says that in cases of Keratitis Centralis the pus cells must be of local origin, as there is no peripheral clouding of the cornea, or circum-corneal injection, to indicate migration from the limbus.

Cohnheim in reply makes a good point by saying that no one has claimed that his description of secondary Keratitis is erroneous in any particular ; that this form of Keratitis is admitted to be genuine, and, therefore, that any change in the corpuscles when Keratitis is otherwise excited, cannot be reckoned an essential and characteristic phenomenon of the process. He explains the apparent local formation of cells in central Keratitis, by mentioning the fact, that he has often observed the in-wandering of the cells from the conjunctival secretion through an abrasion of the corneal epithelium.

Boettcher, in reply ("Ueber die circumscripte Keratitis," Virchow's

Archiv, Feb. 15, 1875), says that in eight cases where he removed the "membrana nictitans" in frogs, and induced central Keratitis, he found that the frogs kept their heads under water generally, thus preventing any emigration from the conjunctival sac. In these cases the same results were found as before, thus seeming to sustain the theory of the local origin of the cells.

He also refers to an observation of Prof. Eberth of Zurich ("Untersuchungen aus dem Pathologischen Institut zu Zurich," 1874), who also objects to the theory of immigration through abraded epithelium.

Boettcher, however, seems unwise in quoting Eberth, who, in the same monograph, claims that even in central Keratitis all the pus cells have come from the corneal margin, which is taking more advanced ground than even Cohnheim himself.

Prof. J. Arnold, of Heidelberg, in Virchow's Archiv, Feb. 15th, 1875, gives his method of demonstrating Diapedesis. He injects cinnabar into the blood vessels, to mark the leucocytes as already described. He then excites inflammation in the mesentery, tongue or bladder of the frog. After twenty-four hours, the animal is bled to death, and injected from the aortic bulb, with a solution of silver nitrate in water, of the strength of $\frac{1}{20}$ of one per cent.

His results are as follows : The endothelium and stomata are mapped out as usual ; the migrating cells escape only by the sutures or stomata ; colored fluids and insoluble particles pass out through the same pores, and in the latter case the particles arrested *in situ* demonstrate the cell borders most beautifully; colloid substances leave the vessels in the same way, proved by injecting colored glue or gum ; after some time the stomata become enlarged, and the red cells also leak out.

These brilliant results have been confirmed by another independent worker, Purves, at the Physiological Laboratory of Utrecht.

Dr. Geo. Thin, of London, a distinguished microscopist, has gone into the subject exhaustively in the Edinburgh Med. Jour. (Nov., Dec., 1875, Jan., Feb., Mar., 1876) with the following result : In a tissue undergoing inflammation, the order of the phenomena is: swelling, death and disintegration of the cells of the part ; exudation of plasma, and emigration of red and white blood-cells. Repair takes place by the organization of the plasma into the inter-cellular tissue, the emigrated cells developing into the normal cells of the part as needed. He thinks that there is no proof that any of these cells undergo retrogressive metamorphosis, and become leucocytes. Hence, all pus is made up of emigrated leucocytes and he agrees with Cohnheim.

The latest communication is from Stricker. (Archives of Ophthal. and

Otol., vol. V, No. 1, Apr., 1876). He excites central Keratitis in kittens with potassa fusa. After twenty-four hours the eye-lids are excised, and the living cornea stained with silver nitrate in substance. After some minutes the cornea is excised, laid in water acidulated with acetic acid, and in twenty-four hours is removed to alcohol, when it is soon ready for sections. He finds distinct segmentation of the corneal corpuscles, and of the contents of the nerve fibres. He admits that it is difficult to prepare a specimen showing these things well. This, with other weak points, will doubtless be criticised by the other side.

RESUME.

1st. The greater part of all pus, wherever found in the body, either in vascular or non-vascular tissues, is made up of emigrated white blood cells or their descendants.

2d. Whether the normal cells of the part proliferate in inflammation is at present *sub judice ;* the preponderance of evidence is against it.

3d. While emigrating, the leucocytes rapidly proliferate in the tissues.

4th. The emigrated cells are capable of undergoing metamorphosis, and of being transformed into fixed elements, similar to those of the tissue in which they are situated ; this is shown in the healing of wounds, where the granulation tissue, which we now know to be made up of emigrated cells and their descendants, is transformed by contact with the normal parts into connective tissue and epithelial cells.

5th. Hence, organization is accomplished by the fixation of the wandering cells, and their transformation into cells like those of the neighboring tissues.

6th. When suppuration occurs on mucous or serous surfaces, while most of the pus is composed of leucocytes, the participation of the local epithelium in the process is extremely probable.

7th. The youngest epithelial cells of a tissue are in all probability nothing but organized wandering cells.

8th. Diapedesis is believed to be as prominent a phenomenon in the so-called chronic forms, as in ordinary acute inflammations.

9th. Morbid growths generally, which do not belong to the connective tissue type, are believed by many to be intimately connected with the emigration of cells at an irritated point.

10th. The recurrence of malignant growths after careful extirpation, is believed to be due to the emigration of the young cells of the tumor, which possess an undoubted power of amœboid motion.

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INFANTILE SYPHILIS.

BY HENRY N. READ, M.D.

I wish to present to the Society a record of some cases of infantile syphilis, which I have been collating during the last three years, since I have been attending physician to the department of diseases of children in the dispensary of the Long Island College Hospital. The whole number of cases which I have tabulated is 53, and all but six of these were dispensary patients ; these six were seen in private practice. These 53 cases I have been enabled to follow from their commencement to their termination, either by death or by what is at the present time cure or permanent improvement. Whether the cure be partial or complete can of course only be known in the after life of these patients. A number of cases whose course I have been unable to follow have been rejected in this report.

The symptoms and course of this disease are too well known to require any notice here, but as regards the somewhat obscure and disputed question of the *hereditary transmission of syphilis*, a few remarks may not be inopportune. The generally received opinion is that syphilis may be inherited by the fœtus: first, through the father; second, through the mother; third, through both. This view is held by the English and American authorities. There has appeared lately, however, a work by Dr. Kassowitz, of Vienna, of great interest and ability, in which the author gives as his opinion, supported by a large number of cases, that the disease is inherited only from one or the other of the parents, and that the third origin mentioned, or transmission from both parents, is inadmissible. He sums up as follows: "The disease known as hereditary syphilis can arise *logically* only in two ways: either that the transmitting agent containing the syphilitic virus (spermatozoon or ovum) carries in itself from the very first the conditions for the development of the disease, or that the fœtus, although healthy from the time of conception, becomes infected through the nutritive substances which draw the virus from the maternal circulation. The facultative existence of both these heterogeneous processes with the same final result is extremely improbable. The former theory of the origin of congenital syphilis, the hereditary transmission *sui generis*, is decidedly the most probable."

From this opinion I must dissent. However *improbable* the "final result" may seem theoretically, one fact appears to me to settle it, viz., that children born of parents, both of whom are syphilitic, if abortion does not take place before gestation is complete, which is usually the case, are always affected with the worst form of the disease and rarely live. Of seven children born with the specific eruption fully developed which I have seen, five were the offspring of parents both suffering from syphilis. The fact is readily and naturally explained by allowing a double inheritance instead of a single. On the vexed question of the possibility of the mother's becoming infected through a syphilitic fœtus in utero, without herself having had the primary lesion, I incline to the affirmative. The weight of authority is certainly on this side, but it is disputed, and Kassowitz decidedly opposes this view; he lays down two axioms: "A woman impregnated by a syphilitic man brings forth syphilitic children, but herself remains free from the disease unless infected from without." Again, "The syphilitic virus does not cross the septum between the fœtal and maternal circulatory systems in the direction from the fœtus to the mother." The fact that large numbers of children are born of perfectly healthy mothers is certainly in support of this view;

but this evidence is only negative and does not invalidate *positive* facts.

With a view of obtaining facts bearing on this question, I have examined and kept under observation a number of infected mothers, who had borne infected children, who denied, and showed no symptoms of, ever having had a chancre. I have seen three cases in which I was *logically* convinced that the poison entered the system through the diseased fœtus, though I have been *morally* convinced in many others. One will serve as a typical example: An infant of 5 months was presented at my clinic last spring for treatment. The symptoms, though obscure at first, were soon recognized as syphilitic, a case of mild type, and the diagnosis was confirmed by the rapid and complete recovery of the child under the exhibition of mercury. Now for the case in point. The mother complained to me of ill-health, dating the commencement of her symptoms from the time of her carrying her child, the latter three months of pregnancy. She was examined and found to have secondary syphilis. The cachexia was strongly marked, and there were present sore throat, coryza with an offensive discharge, and severe nocturnal pains. She was put upon specific treatment and made a good recovery after two months or more. During this time I took great pains to get the entire history of herself and family. I found she had been married four years, had had one miscarriage and two living children. The eldest, a fine healthy boy, three years old, had no appearance or history of syphilis; the miscarriage occurred fifteen months after the birth of her first child, at about the fourth month; she could assign no cause for it. The third conception resulted in the birth of the child which she brought to me for treatment. She denied ever having had any sore or venereal disease whatever. Being of excellent character and fair condition in life, I attached some weight to her statement, but persuaded her to undergo a thorough physical examination; I found, however, no trace or remains of a chancre on any part of the body, and no enlargement or hardening of the inguinal glands. I then examined the father, and obtained the information that he had had a sore, followed by a rash, alopecia and rheumatoid pains, about four years previous to his marriage; he had been treated for this and thought himself cured, till about a year and a half after marriage and after the birth of eldest child, when he had a relapse of his symptoms, for which he was again treated and recovered. This second attack, it will be observed, occurred about the time of the second impregnation of his wife, which second impregnation resulted in miscarriage. He denied also that his wife had ever had any sore. To sum up the points of proof, then, we find: first, the wife could not have been infected by the husband at or during the first pregnancy, or the first child would have been syphilitic, for if both

parents are diseased, the child never escapes; second, the wife could not have contracted a chancre from her husband at all, as he had the primary lesion years before marriage; third, that as her symptoms were of the ordinary secondary variety, to have been produced by a chancre she must have had the initial lesion at the furthest only six months previously to the time I saw her—in other words, she must have gotten it during the last month or last two months of her pregnancy, and must have gotten it from some other person than her husband, a supposition which presents too strong a physical objection to its being entertained.

The facts I think, therefore, warrant me in saying that the mother became infected through the diseased fœtus, and that the syphilitic virus does cross the septum between the fœtal and maternal circulatory systems in the direction from the fœtus to the mother. A still stronger point in favor of the maternal infection through the fœtal circulation is afforded in the law laid down by Colles, of Dublin, "that syphilitic children nursed at the breast often infect wet nurses, but *never* their own mothers, even though the mothers be healthy." This was enunciated in 1837, and according to Mr. Hutchinson has received the assent of every authority who has since written on the subject. If this law be true, of which there can be no dispute, how can we escape the legitimate conclusion it leads to? viz., That *all* women who bear syphilitic children *have a modified form of the disease*, which though unattended by any outbreak, *yet is protective.* The vast practical importance of these facts is seen at a glance, when the question of wet-nursing syphilitic children is presented. I have no cases bearing on the point as to whether a woman who acquires syphilis after pregnancy can infect the fœtus. All authorities that I have seen think it extremely improbable that the mother can convey the disease to the fœtus if she acquires the initial lesion in the latter months. Kassowitz denies that it can be done in the earlier, Bumstead maintains the contrary, and cites a case of infection by the mother at the fifth month, but further investigation is needed to make this point clear. The laws of the transmission of the disease are as yet extremely obscure, and our best authorities differ widely regarding them. No better confirmation of this remark is afforded than a perusal of the recent debate and criticisms on Mr. Hutchinson's paper on syphilis, read before the Pathological Society of London.

The *forms* under which the disease manifests itself are very numerous, and the *degrees of intensity* range from the most malignant kinds of poisoning to the lightest and easily remediable kinds. In my cases, which include only children under three years of age, I have observed the disease appear anywhere from birth to three years, four-fifths showing the

eruption before the completion of the eighth week. In the fifty-three cases here collected, eruptions of the skin were noticed in all but ten cases. The eruptions include the erythematous, the papular, vesicular, pustular and squamous. Roseola or erythema occurred alone or in conjunction with other eruptions in twenty-three cases. Psoriasis, the next most frequent eruption, occurred in fourteen; this was usually of the palmar and plantar variety. Eczema occurred in ten and impetigo in seven cases, acne and ecthyma respectively in three and five cases. Pemphigus was seen in two cases; in each the child was born with the eruption, and both proved rapidly fatal. There has been a good deal of controversy as to whether this eruption is syphilitic in new born children; there is no doubt that it was in my cases, as the infants both presented the symptoms of the disease in its worst form and shortly succumbed to it.

Affections of the mucous membranes, including discharges from the surface, condylomata, mucous tubercles or ulcerations occurred, one or the other, in all my cases; I did not meet with a case in which there was not some morbid process in some of the mucous membranes. The ordinary coryza, or snuffles, was by far the most common, being observed to a greater or less degree in forty-five of my cases. This symptom is one of the most difficult and unsatisfactory with which we have to deal in infantile syphilis, and one to which death is due in many cases which would otherwise recover; the thick discharge acting in a mechanical manner to plug the nares and prevent nursing at a time when nursing is all-important, thus compelling the child to derive its nourishment by the tedious and unsatisfactory process of spoon-feeding. In the poorer walks of life, where the mother of the family is generally overworked, to attempt to bring up a diseased child by spoon-feeding is as a rule to consign it to certain death.

A peculiar manifestation of the disease, which I found only mentioned in Vogel's work and unnoticed by other authors, is a circumscribed suppuration of the subcutaneous cellular tissue, resulting in the formation of small abscesses, which contain an unhealthy fluid hardly to be designated as pus, but holding the *débris* of the tissues in a rather thin, offensive liquid. These abscesses are painless, and seem to have no connection with the lymphatic glands; inflammation can scarcely be said to be a concomitant of them, as there is no heat, pain or redness, and whether they are opened with the knife or discharge spontaneously, they are very slow and unsatisfactory in healing, the resulting cicatrix being irregular and puckered in appearance instead of smooth and straight. I have met with seven of these cases. Inflammation of the

eyelids, with loss of part of the hairs of the lid, was present in twenty-five of my cases or nearly one-half, but I have not met with any cases under three years of age of affections of the structure of the eye itself; the keratitis of Mr. Hutchinson, so insisted on as pathognomonic of congenital syphilis, is found at a more advanced age, though a case is recently reported in London of its occurring in a child one year old. The peculiar appearance of the teeth described by this author I have seen certainly in some cases, but in far the larger number of cases I could not detect any difference from other children so far as the teeth are concerned; I am not in a position, therefore, to verify his observations on this head, and the more especially as I have seen the notched teeth in children who were undoubtedly free from syphilis.

Affections of the bones were seen by me in two cases, one child exhibiting two abscesses, one at the ankle and one at the wrist joint, which discharged spontaneously, and sloughing of the soft parts having taken place to some extent, the bones at each joint were exposed, thickened, finally denuded of periosteum and necrosed. It is needless to add that the case was one of the worst type and proved rapidly fatal. The other case was diagnosticated as "dactylitis syphilitica," a name given to a peculiar form of bone-disease by Dr. Taylor, of New York, in his pamphlet on this subject. The case was as follows: A child, seventeen months old, was presented at the dispensary for treatment, which, on being examined, showed an enlargement of the first phalanx of the thumb and third finger of the left hand, and of the first phalanx of the great toe of the right foot; a swelling of the right ankle was also noticed. The mother stated that the phalangeal enlargements had existed for some time, but the swelling of the ankle had appeared suddenly and it was for this she sought advice; the swelling differed very much from that of the fingers and toe, being soft and quite painful to the touch, while the others were hard and could be handled with impunity: topical remedies soon relieved the painful enlargement at the ankle, but it was not until a suspicious discharge from the nose attracted my attention that the true character of the phalangeal excrescences was suspected; a closer examination and questioning of the mother revealed that the child had syphilis, and the diagnosis was verified by the disappearance of the swellings under specific treatment. These enlargements appeared in the middle of the phalanx and gave to the finger that bulbous appearance described by Taylor, and also by Dr. Bulkley, of New York, who has reported two similar cases in an interesting article, entitled "Rare Cases of Congenital Syphilis." They are due, according to Taylor, to an inflammation of the tissues surrounding the bone, and finally

of the bone itself, distinguished by chronicity, absence of pain and the usual phenomena of inflammation.

Disease of the internal organs due to syphilis was found in sixteen of my cases. The liver was the organ most often affected, nine cases being diagnosed and seven of these proved fatal. In those cases where no autopsy was obtained, simple enlargement was all that could be confidently pronounced to exist. In a few cases where I made post-mortem I found extensive hypertrophy and induration, the substance being hard and difficult to cut, and the cut surface presenting a glistening, shining appearance, with small, white, indurated bodies, like grains of rice, scattered through its extent. This condition was first described by Gubler, in 1848, who states it to be due to abundant increase of the connective tissue of the parenchyma of the organ and of the capsule of Glisson. In Diday's admirable work, however, do we find the best description of the pathological changes in the syphilitic liver of children. I also met with some cases of partial induration, where the hardened portions were scattered throughout the gland, like nodules, the size of a hazel nut. Vogel states that syphilitic inflammation of the liver is "very rare." Eustace Smith (Wasting Diseases of Children) also speaks of it as infrequent; but Steiner, of Prague (Compendium of Children's Diseases), has met with it quite often. The symptoms are enlargement of the gland, vomiting, either diarrhœa or constipation, abdomen tympanitic, tender to the touch, pulse quick and small; the child is restless and moans, and a very high temperature obtains. I have not found jaundice to be present. Steiner has found it quite often, but Eustace Smith, West, Smith of New York, and most other authorities, speak of it as wanting. These cases are generally fatal. I have met with deposits in the lungs in six cases, but whether these were due entirely to syphilis, or to a concurrent tubercular diathesis, I am unable to say. In two post-mortems which I made I found no miliary tubercles, but indurated yellow masses were deposited throughout the lungs, surrounded by patches of circumscribed inflammation, which were similar in appearance to those seen in the lobular pneumonia of young infants. Lebert has described these deposits as containing, in a soft, pulpy, diffused substance, small cells, which differ from those of cancer and tubercle, and are similar to those seen in syphilitic gummata; he therefore regards these deposits as an early stage of pulmonary gummata. Virchow, however, has seen the same appearance in children dead from simple atrophy, and does not regard it as pathognomonic of syphilis.

M. Fournier (*Gazette Hebdomadaire*, Dec., 1875) maintains that there is a pulmonary phthisis, due entirely to syphilis, which differs from

tubercular phthisis of the lungs in being more limited and circumscribed in the situation of the deposit, in being as often located at the base as at the apex, in not tending to extend throughout and disorganize the whole tissue of the lungs, and differing in microscopical characteristics also, and a much more important and practical difference, in tending to recovery under the use of mercury. I have had a case seeming to confirm this point. A child of seven weeks of age was brought to me with syphilis inherited from the father; the symptoms were of the ordinary variety, and had appeared during the fourth week after birth; treatment by mercury, continued during two months, restored it to health. This occurred in June; the following January I was again called to see the child, and was told that it had not been thriving for a month or more. An examination showed a deposit at the left apex, with all the symptoms of pulmonary phthisis ; cod-liver oil with quinine and stimulants were prescribed, but no improvement followed, the patient, indeed, getting gradually worse. After persevering for about a month with this treatment I resolved to try a mercurial ; accordingly I directed one scruple of the *unguent hydrarg.* to be rubbed into the skin under the arms twice daily, and had the satisfaction of seeing the deposit gradually resolve, and a marked improvement follow within a short time. I should not omit to mention, however, that the former treatment was continued with the use of the mercury. The child is now fat and well.

Suppuration of the thymus gland I have seen but twice. Enlargement of the spleen Dr. Samuel Ghee, of London, states to be present so as to be felt in one-half the cases of infantile syphilis ; Eustace Smith says in one-fourth; other authors mention it, but not in what proportion met with. I have seen but five cases, or less than one-tenth of my whole number. I have not met with any cases of nerve lesion, unless a case which terminated fatally by convulsions be placed under this head, but no *post mortem* being obtained, the diagnosis is not certain. Hughlings Jackson and Dr. Buzzard, of London, have made some very interesting researches in this class of cases ; the former suggests that plugging of the minute branches of the cerebral arteries by specific deposits gives rise to hemiplegia, convulsions, and even chorea, in children inheriting syphilis.

Prognosis.—The number of deaths in the 43 cases reported was 13, or not quite 25 per cent. This compares favorably with most authors. Some of my cases were lost, I am convinced, through unfavorable hygienic surroundings. Of six cases seen in private practice, only one died, or 16.4 per cent.; the remaining 12 deaths occurred in 47 dispensary patients, or 25.5 per cent.; this is significant of the influence of surround-

ings in the prognosis. Source of inheritance : 5 cases born of parents both syphilitic all proved fatal, or 100 per cent.; 12 cases born of syphilitic mothers gave 3 deaths, or 25 per cent.; 36 cases born of syphilitic fathers gave 5 deaths or 13.8 per cent.; This would show, other things being equal, the prognosis to be most unfavorable when the disease is derived from both parents ; next in gravity when derived from the mother, and most favorable when inherited from the father alone. The time of the appearance of the eruption is of much moment. I have never seen a case recover where the patient was born with the eruption, or where it appeared within a week after birth. Trousseau, Van Buren and Keyes make the same observation. Inferentially, the later the appearance of the symptoms the more favorable the prognosis. The date of the disease in the parents compared to the time of birth of the child is of vast importance in the prognosis, but I have been unable to obtain sufficiently accurate information to deduce any rule, further than the general law laid down by all observers that the nearer the birth of the child to the period of the beginning of the disease in parents, the more unfavorable the prognosis. The appearance of any intercurrent disease, not dependent upon the diathesis, of course modifies the prognosis according to the nature of the disease.

Treatment.—In speaking of this I shall be brief. However much writers disagree as to laws of inheritance and pathology, they are unanimous in the belief of the efficacy of mercury in the treatment of inherited syphilis. I have most generally followed the inunctive plan in my cases, as recommended by Sir Benjamin Brodie. Disturbance of the stomach and bowels is almost entirely obviated by this plan of administration, though not, I believe, entirely; I have seen two or three cases where diarrhœa followed inunction. Trousseau also mentions this fact. In administering by the mouth I prescribe 1/8 grain of calomel with 1 grain of *creta prep. ter die,* in preference to the *hydrarg. cum creta,* which I have often found inert. Iodide of potassium I have generally used through the medium of the mother or nurse, as it tends to promote gastric disturbance in very young children if given any length of time. I am partial to a mixture of equal parts cod-liver oil and glycerine, commencing with a half drachm and gradually increasing to one drachm three times daily, and continuing this for two or three months. The preparations of iron, when indicated, I have preferred to give through the medium of the mother.

Attention to cleanliness and local treatment is of the first importance ; on all eruptions accompanied with a discharge I use some simple ointment, and on the dry, harsh skin, which tends to crack and fissure, I

apply oil several times daily, especially about the genitals and anus to protect from the discharges. In the snuffles I give personal supervision to keeping the nostrils clear, using a syringe, with a weak solution of alum or simple warm water, and removing with the forceps all hardened masses which block up the passage. Considerations of dress, fresh air and nursing will readily suggest themselves.

NEW INSTRUMENTS FOR THE TREATMENT OF STRICTURES OF THE URETHRA WITH CASES.

BY C. H. GIBERSON, M.D.

Figure 1 represents a new instrument called the Divulsing Urethrotome, designed especially for the treatment of strictures of large calibre.

It consists of a metallic tube nine inches long and eighteen millimeters in circumference, enlarged to 20 mm. at one extremity, five-eighths of an inch from which is a slightly raised band or shoulder. The tube is split throughout one-third its length to permit the halves to be expanded laterally. Two rings near the end serve as a handle. Within is a steel tube, into which an olive-shaped bulb can be screwed, whilst at the opposite end is a screw, turning which retracts the bulb and dilates the instrument. There is a deep groove or slot in the bulb for the blade, whose shaft passes through the inner tube and far enough beyond to permit a handle being attached. Between the bulb and shoulder of dilating bars, a distance of $\frac{5}{8}$ in., the blade can be exposed. Two are provided, a smaller $\frac{1}{12}$ inch wide, and a larger $\frac{1}{8}$ of an inch. The aim of this instrument is to avoid deep incisions, but by a process of stretching and nicking combined, to effect division of strictures. There are three sizes of bulbs, or wedges as they may be called, viz.: 20, 25 and 30. (Throughout this paper the French scale is referred to, it being the only one of definite measurements.) With the first can expand to 30 F., with the second to 35. The largest, or No. 30, is seldom needed, except as a bulbous bougie for exploring purposes. There is also a small outer tube with flat wedge for the treatment of strictures below 20 F. Though gradual dilatation with flexible olive-pointed bougies is best for most cases of this class, no apparatus would be complete without the means of dealing with them, if only as preparatory to the use of the larger instruments.

The same blades, screw and inner retracting tube can be adapted to this. At first sight it seems a simple affair to divide a band of organic tissue which constricts the urethra. And so it is when you have fixed it at an exact point in relation to your urethrotome. A previous measurement may approximate its seat, but the attempt to operate with no more reliable data will be apt to prove a failure. For this instrument is claimed the ability to locate and divide a stricture and at the same time to be assured of such division. It is marked with inches and halves, but these are intended simply to aid in determining the location of the constriction.

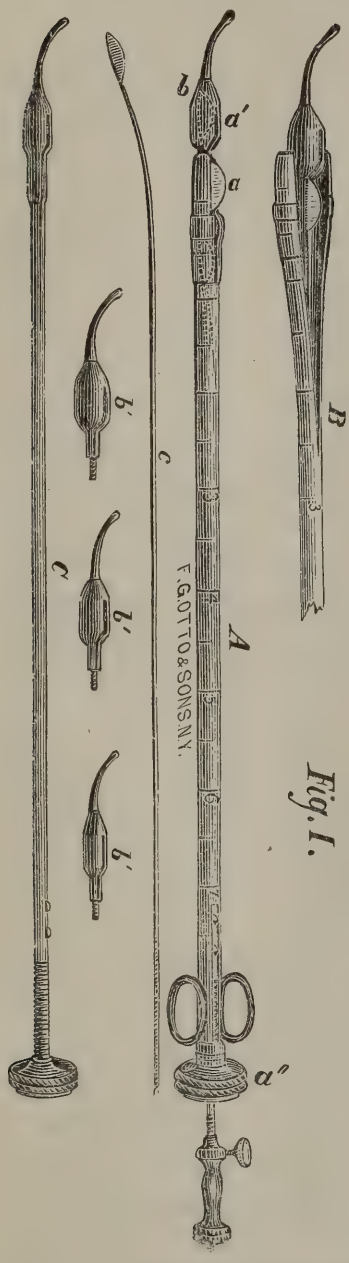

Fig. 1.

A—Divulsing Urethrotome closed, but showing at *a* where blade is projected. *b'b'b'*, Bulbs or wedges of various sizes. *c*, Blade. *a'*, Dotted lines show where blade is concealed. *a''*, Dilating screw. *B*—Same expanded, with blade exposed. *C*—Inner tube, with bulb or wedge attached, and useful as an exploring sound.

In using it, the bulb or wedge first takes cognizance of the stricture, which as it passes through is felt by the operator. This done, the constricting band must surround the dilating bars at some point between the wedge and shoulder. If in any doubt, proceed a little further, until the band actually rests against the projection referred to. Usually there will be no difficulty in feeling the resistance offered at this point. If the stricture be of so large a calibre as not to be so perceived, a few turns of the dilating screw will so expand the bars and distend the urethra as to be readily detected by the shoulder. This expansion stretches and holds the band between the two points named. The hand manipulating the screw feels the tension, and the patient is likely to say when it is becoming uncomfortable. At this stage the blade, which has lain concealed in the wedge, is retracted so as to traverse the part across which the band must lie. Usually there is sensible relief by the first incision, but rarely is the stricture quite severed. Another turn or two of the screw again makes it tense, when the blade, which for the time being has been concealed between the bars, is carried forwards to the wedge, again nicking and probably severing the band. If completely

divided, further expansion becomes easy, as shown by the facility with which the screw turns. This process of dilating (or rather divulsing) and nicking is continued until resistance ceases. The instrument wholly or partially closed can now, before removal, be used to determine whether every fibre of the constriction has been completely divided.

In addition to the wedge then, the shoulder on dilating bars, as passed back and forth in the urethra, serves very efficiently the purposes of a bulbous bougie.

Having disposed of one stricture, a second may be treated in a similar manner, and so on, at the option of the surgeon.

It will also be observed that the breadth of the dilating bars, by affording more surface for pressure and counter-pressure, is less liable to contuse the urethral walls. Also by making lateral dilatation, and at right angles to the cutting edge of blade, the band is drawn in a straight line across the space between the bars, like a fiddle string, and is the more easily divided.

Probably this is one reason why I have not found it necessary to dilate to a degree insisted upon by Dr. Otis especially, never going beyond 35. We thus avoid the pain and contusion which must occur with great over-distension, and particularly with the slender bars of instruments now in use.

With mine, too, extreme dilatation occurs only at the point of constriction. I have not employed anæsthesia when operating, nor has the pain been severe enough to be seriously complained of. The passage of a full-size sound through an irritable urethra or moderately contracted meatus has often been found more intolerable.

The combination, too, of divulsion and incision is less liable to produce hemorrhage than simple incision, so that operations in the deep urethra are correspondingly safer.

The difficulty, also, of fixing a stricture at the precise point where the blade projects has to my mind been obviated in no other dilating urethrotome. The latest modification, I believe, of Dr. Otis' instrument makes the blade certain to bear upon the constricting bands, but at the same time involves the risk of incising the healthy urethral wall. As you are all aware, it is the dilating principle adapted to the Maisonneuve urethrotome.

Each bulb or wedge of my instrument has a flexible copper tip, to enable the operator to traverse the deep urethra, even to enter the bladder, if desirable. In the latter case urine will flow out at the handle. In the event of false passages, for instance, this might be necessary in order to be certain that the instrument is not outside the urethra. But the chief advantage is in being able to operate on strictures in the curved portion of the canal.

If for any reason divulsion alone is preferable, we have the means of accomplishing it. In spasmodic strictures, of whose existence I have no doubt, usually occurring in the membranous portion and probably due most often to local irritation following or accompanying unnatural habits, I believe that sudden over-distension of the passage may, as in the case of the rectum or female urethra, by temporarily paralyzing the part, afford time for the local disturbance to subside.

For a few days after internal urethrotomy it is thought best to pass, at short intervals, a full-size sound to prevent recontraction. Instead of a sound I use this instrument as a dilator, and which serves, possibly better, as it can be introduced through an ordinary meatus, and at the point of stricture expanded as desired. A serious drawback to gradual dilatation of many strictures is the comparatively small size of the normal meatus. It can be enlarged by incision, but this is not free from objections. There may follow troublesome bleeding, or inflammation with the formation of cicatricial tissue, thus destroying the elasticity of the part. Unless freely cut it will probably have to be repeated, or it may be so enlarged as to cause actual deformity, and perhaps to render the organ more liable to contract gonorrhea, or more serious disease. Some persons, also, are so jealous of "private appearances," as to object to any such measure, however necessary it may seem to be. With this instrument, unless the meatus or contiguous urethra is abnormally contracted, there is no need to enlarge it.

Finally, it is simply constructed, has no bars or braces liable to break within the canal, will not pinch the urethral mucous folds, is easily cleansed and not expensive, especially when we consider how many indications it can fulfill. By providing a few more bulbs and removing the outer, dilating part, we have all that is required in the way of bulbous bougies for exploratory purposes.

To F. G. Otto & Sons I am greatly indebted for its perfect construction, as well as for numerous hints regarding its mechanical details.

Let me now present the histories of eight cases taken from my notebook without selection, except as they there appear in alphabetical order.

Case 1.—A. C., single, aet. 22, consulted me Aug. 20, 1874. Had first gonorrhea two and half years ago, lasting several months. A second attack six months ago, since when he has had a chronic mucopurulent discharge. Meatus measures 23 F., with induration extending half an inch along the canal. For the relief of this I employed the Divulsing Urethrotome. Having introduced it with wedge No. 20, and dilated so as to produce marked tension, the blade was drawn forward across the floor of constricted urethra. Again expanded more,

pushed blade back to the groove in wedge, and withdrew the instrument; immediately passed a bulbous bougie No. 30 without finding obstruction. There were indications of rather free hemorrhage at the time of operation, but the wound was packed with styptic cotton and no trouble followed. It is my practice after incision of the meatus and adjacent urethra to so pack the wound, and allow it to remain two or three days. The cotton adheres to the cut surfaces, prevents their union, and need not interfere with urination. Besides, the iron used in its preparation prevents it becoming offensive. The gleet ceased with healing of the wound, and on examination two months after operation found urethra of normal calibre.

Case 2.—I. E., married, 41, had first gonorrhea in 1856, a second in 1871, which ended in gleet, accompanied by dribbling of urine. Found a tight stricture in bulbous urethra, through which a filiform bougie was passed with difficulty. Practiced gradual dilatation, which cured the gleet and urinary trouble. Three years later, Nov. 7, 1874, he returned, complaining of frequent desire to micturate, and which caused smarting pain. After a prolonged effort introduced a whalebone bougie No. 2 F. During the next two weeks dilated to No. 18. Then with small outer tube and flat wedge of the Divulsing Urethrotome incised band at $5\frac{3}{4}$ inches from meatus until 24 F. was passed.

Dec. 1.—Bulbous bougie No. 26 fails to pass the stricture. Introduced Divulsing Urethrotome, wedge 23, and by a rapid expansion to its fullest extent doubtless ruptured the remaining fibres of the constriction. This was followed by a few drops of blood.

Dec. 5.—No. 27 bulbous bougie passed and returned without meeting any obstruction. Up to the present there has been no return of the gleet or difficult micturition. Have not since been able to explore the urethra.

Case 3.—W. E., 29, single, had gonorrhea in 1869, which he says was promptly cured. He formerly masturbated excessively. Nov. 17, 1874, consulted me for frequent nocturnal emissions. Nervous system below par, with decidedly morbid mental condition. Stream of urine twisted and divided. Obstructions at fossa navicularis at 2, $2\frac{3}{4}$ and $5\frac{1}{2}$ inches from meatus. Greatest contraction at $5\frac{1}{2}$ in., through which a bulbous bougie No. 24 passes with difficulty. Gradual dilatation reduced the number of emissions somewhat.

Dec. 29.—With Civiale meatotome incised the band at fossa navicularis and enlarged the meatus.

Jan. 23, 1875.—Bulbous bougie No. 32 goes to $5\frac{1}{2}$ in., beyond which No. 28 can be passed. Conical sound No. 30 enters bladder.

Though his general health is better, the urethra continues irritable and emissions frequent.

Feb. 6.—At my office, with Divulsing Urethrotome, divided the band at 2 in. from meatus and overstretched the one at $2\frac{3}{4}$ in.

Four days later over-distended the stricture in deep urethra, carrying he expansion to 35 F. Twice a week for a month continued to pass a sound of full size.

Jan. 29, 1876.—Eleven months after last operation a bulbous bougie No. 30 finds no trace of obstruction at any point in urethra. General health excellent and seminal emissions not oftener than every eight or ten days.

Case 4.—P. H., 22, single. In 1872 had urethritis for the first time, and early in 1874 a second attack. He consulted me Oct. 29, 1874, for frequent micturition, eighteen to twenty times a day, with acute pain at the termination of the act. Aching in perineum. No discharge since July. Has been under continuous treatment by means of suppositories and internal remedies for three months without much benefit. During urination I observed a small stream of corkscrew character. During expulsion of last few drops he showed signs of pain about glans penis, by nervously pulling at the prepuce. Introduced a catheter, but found bladder empty. Per rectum prostate tender but not enlarged. Exploration of urethra revealed stricture about bulbo-membranous junction admitting No. 20. Another at $2\frac{1}{4}$ in. from meatus which admits 24. Tender spot at fossa navicularis, but No. 26 passes it. Practiced gradual dilatation until No. 25 sound entered bladder. As is true in many cases, the use of conical metal sounds was found less painful than the flexible bougies.

Nov. 29.—Enlarged meatus and first three-quarters inch of urethra to 32. Continued use of sound No. 25 at short intervals until January 7, 1875. This size could be passed without much discomfort, but a larger one excited spasm of the constrictor muscles and caused intolerable pain on entering the membranous urethra. Every fourth day for six weeks one or other side of the perineum was blistered with cantharidal collodion.

Feb. 20.—Urinates but five or six times a day and once at night, without pain. Urine contains a small amount of pus and blood. Now find strictures at one inch, $2\frac{1}{4}$ in. and $5\frac{1}{2}$ in. from meatus. That at $2\frac{1}{4}$ offers most resistance. This I dilated to No. 35 with my instrument, but no fibres seem to have been ruptured and recontraction soon occurred. Repeated the process with same result. Then with Divulsing Urethrotome incised on roof and passed bulb No. 30. Reversed and cut on its floor, followed by easy passage of bulbous bougie

No. 32. Not more than two drachms of blood were lost. During the following three nights, owing to painful erections, had repeated small bleedings. Following these incisions, the bladder was frequently washed with tepid water, and various applications made to the prostatic urethra.

Sept. 14—Seven months later passed No 28 solid sound without pain. Bulbous bougie No. 30 finds no obstruction until 5½ in. is reached, and then only temporary hesitation, apparently due to slight spasm. The first ounce of urine contains a few pus and blood cells. The remaining portion still less, showing that urethra is the seat of principal remaining trouble.

Nov. 19.—Two months later find urine acid, it contains no blood, and only an occasional pus cell. Suffers no pain or inconvenience.

Case 5.—C. H., aet. 27, single. Has had urethritis four times within seven years, the last time a year ago. In 1872 I fully dilated a stricture at the bulb. He then believed himself impotent, and was without sexual desire. He was cured by phosphorus, iron, and the use of sounds.

Nov. 19, 1874.—Has symptoms similar to those of 1872. Has been addicted to sexual abuses.

Find an annular stricture between 5½ and 6 in. from the meatus, which barely admits bulbous bougie No. 22.

Dec. 23.—At my office with Divulsing Urethrotome incised this band on roof, and passed bulb 28 to bladder. Scarcely any bleeding and no subsequent irritation.

Dec. 23.—Passed sound No. 29.

Feb. 23, 1875.—No. 28 bulb enters readily, but on returning detects a roughness of urethra at point of operation.

Nov. 29.—Bulbous bougie No. 25 fails to note any stricture, but 27 feels very slight obstacle at site of former contractions. Probably all the fibres were not completely severed. The instrument used was my earliest attempt, and the want of complete success is partly, at least, attributable to defects, both of design and construction.

The result, however, is much better than followed the preceding treatment by gradual dilatation.

Case 6.—A. L. H., 24, single, came to me through the kindness of Dr. Thayer.

Nov. 26, 1875.—Has gleet, the result of his first and only gonorrhea, contracted nine months before. The first half inch of canal, including meatus, indurated, and admits a No. 24. At 1¼ in. from meatus is a slight band, recognized by No. 30. No. 31 bulbous bougie, on returning, meets with faint resistance at 1¾ and 2¼ inches from mouth, but believed to be only folds of mucous lining. A distinct annular stricture ⅜ inch wide, and contracted to No. 20, between 5¼ and 5¾ inches from meatus.

I enlarged the meatus and first half inch of canal to No. 33. During the next twelve days passed flexible bougies to No. 25.

Dec. 12.—With Divulsing Urethrotome, at my office, incised the band at $1\frac{1}{4}$ in. until No. 30 bulb passed without hesitation. Very slight bleeding and pain not complained of.

Jan. 7, 1876.—At his house, operated on the stricture in deep urethra, and passed No. 30 bulbous bougie beyond it. No bleeding of moment.

Jan. 9.—With instrument simply distended the part to No. 35. This was followed by a few drops of blood, but no constitutional disturbance. Jan. 11, repeated the dilatation.

Jan. 13.—After exposure to cold and fatigue had acute orchitis with intense pain. Testicle swollen and very tense. Half a grain of sulphate of morphia subcutaneously, with poultices containing lead and opium, relieved the pain completely and permanently. In one week he returned to business.

Jan. 30.—Has no gleet, and feels quite well.

Apr. 8.—No return of gleet. Did not examine urethra for lack of opportunity. The case is cited to show that with this instrument a stricture of the largest calibre can be severed; also to show the value of such treatment for the cure of a gleet which had resisted gradual dilatation and other standard methods.

Case 7.—H. D. M., 48, married. First gonorrhea 20 years before. Two attacks of urethritis since, following intercourse with his wife, who was being treated for uterine disease. March 11, 1875, he consulted me for very frequent micturition, especially at night, preventing sleep and impairing health. No pain, but constant sense of hypogastric fullness. Urine alkaline, with copious ropy deposit, including mucus, pus, blood and triple phosphates. Diagnosed chronic cystitis. Desired him to urinate in my presence, so as to observe the stream and amount passed. Made but two ounces with small and feeble stream. With catheter immediately drew 14 oz. Believing cystitis to be exceedingly rare as an idiopathic disease, its cause was looked for. Meatus urinarius admitted No. 32 bulb. No. 27 detected slight induration and contraction at the fossa navicularis. A well-marked annular stricture, through which No. 20 hardly passed, was found about $5\frac{3}{4}$ inches down. This was dilated with sounds to No. 28. Bladder emptied twice a day with catheter. He was also taught how to wash it out with tepid water. The method adopted proved both convenient and efficacious. A Davidson syringe with smallest nozzle can readily be adapted to a catheter. Having introduced the catheter, always a flexible one if possible, with eye near extremity, attach the nozzle of the syringe previously filled, and slowly throw in the contents of one, two or more bulbs, or until there is painless

distension of the bladder. Allow the contents to escape through the catheter and repeat the injection until the water returns clear.

June 2.—Has used catheter and washed bladder faithfully. No irritability remains, but still unable to pass voluntarily more than one-eighth of urine. A small amount of gelatiform substance expelled with first portion and probably from prostatic urethra.

The stricture at $5\frac{3}{4}$ inches has recontracted to No. 22. To pass a conical sound No. 27 twice a week.

July 2.—Bulbous bougie finds no change in the deep urethra. Simple dilatation is evidently not the remedy of this case.

Aug. 14.—Can pass but one-eighth of urine voluntarily.

Introduced Divulsing Urethrotome, wedge No. 25. The instrument was firmly grasped by the stricture. I expanded a little and drew blade across the band on its roof. Increased the expansion and pushed the blade forwards, when all resistance ceased. Dilated to 34, and again passed blade back and forth. Very slight bleeding. Immediately passed sound No. 30 to bladder, and bulbous bougie No. 32 beyond the point of incision. Some hours later the necessary passage of a Jacques' catheter to empty bladder was followed, first by aching in his right testicle and groin, then a sharp chill, with severe pain in pelvis and loins. Then came high temperature followed by profuse sweating. Anodynes and fomentations soon relieved the acutest pain, and with the sweating his temperature fell to normal. The use of catheter the next day produced a similar, though less violent attack. Quinine in large doses was then given for a few days. This paroxysmal tendency upon the use of the catheter did not entirely disappear for six days. One lesson to be learned from this case, is to avoid as nearly as possible all instrumental interference for at least two days after internal urethrotomy, especially in deeper urethra.

Sept. 8.—Twenty-five days after operation he passes rather more than half his urine.

Dec. 9.—Four months after, bulbous bougie No. 32 enters bladder and returns without obstruction. Urine is acid and contains a few pus cells, doubtless from the urethra.

April 6, 1876.—No stricture to be found with No. 32 bulb. Passes all his urine voluntarily, except from one to three ounces. His general health is restored, and but for the small residue of urine requiring catheter, he would not be aware of any trouble. Still washes bladder regularly.

This case was not improved by gradual dilatation even up to No. 28, but was practically cured by operative treatment.

Case 8.—G. Y., aet. 36, single. Says he never had urethral discharge, though he had a stricture dilated in 1868. Consulted me Jan-

uary 22, 1875. For a few weeks preceding had noticed a semi-transparent viscid matter oozing frommeatus. Stream of urine small and feeble. Has an annular stricture ¼ inch wide, and which barely admits No. 16, in membranous portion. No. 28 bougie finds slight obstructions at fossa navicularis, 1½ and 2¼ inches from meatus. Practiced gradual dilatation until No. 26 sound passed, yet bulbous bougie 22 was arrested in membranous urethra.

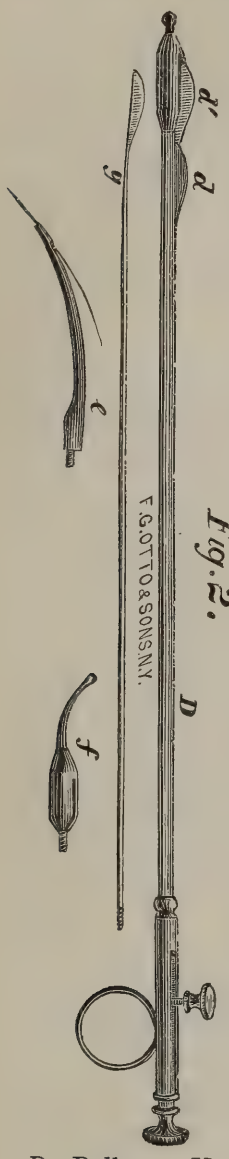

Fig. 2.

D, Bulbous Urethrotome, showing at *d* were blade is concealed and at *d'* where exposed.

e, Flexible tunneled tip with filiform guide.

f, Bulb, (of which there are several sizes) with flexible copper tip.

g, Blade.

Feb. 20.—Introduced Divulsor, (instrument without blade,) wedge 22, and expanded rapidly until a drop of blood appeared at the meatus and the stricture was felt to yield. Made no incision, but withdrew and passed bulbous bougie No. 28 to bladder. With several subsequent urinations a few drops of blood were seen. Afterwards I operated by divulsion and incision combined on the ante-scrotal constrictions.

Six weeks after the rupture of stricture in deep urethra, bulbous bougie No. 27 failed to detect it. The discharge had ceased entirely.

I have notes of other cases operated on more recently, some of which are still under treatment. The foregoing are reported, as before stated, without selection, and are not offered in proof of the theory that stricture can be radically cured by complete division whilst on the stretch, but to demonstrate the ability of my divulsing urethrotome to deal with those of large calibre. Sufficient time has not elapsed in either case to warrant the assumption that recontraction will not occur. Some of them, however, seem to prove that the combination of divulsion and incision effected what neither gradual dilatation nor divulsion alone was able to accomplish.

Figure 2 represents a simple instrument, called a Bulbous Urethrotome, designed for the treatment of strictures of all calibres between 9 and 30 of the French Scale, or 3 and 18 English. It consists of a metallic tube, near one end of which is attached a ring to serve as handle. Into the other extremity is screwed one of a series of grooved bulbs of various dimensions. Through the tube passes a steel rod, one end of which is a blade half an inch long, from one-eighth to one-twelfth inch deep, and which is concealed until required. The entire length of instrument is eleven inches.

Knowing how unreliable are the most careful measurements of the penis for determining the precise locality of a given stricture, this is so designed that the operator can depend upon the sense of touch alone. It therefore combines the merits of a bulbous bougie and urethrotome.

Having a case upon which it is proposed to operate, screw to the tube a bulb nearly corresponding with the calibre of the stricture. First pass it through the constriction, which no practiced hand will fail to note. Return the bulb to just beyond the stricture, and whilst so held by the middle finger in the ring of handle, the blade is pushed forward from its concealment by the thumb of the same hand, and made to surmount the most prominent part of the bulb.

Thus situated, the instrument is drawn forwards and made to cut its way through the stricture. If a single incision does not sufficiently enlarge the canal, a bulb several sizes larger may take the place of the first, and the process be repeated. The cutting may be done either on floor, roof or sides of urethra.

A flexible copper tip can be attached if the stricture is in the curved part of the canal or beyond the reach of a straight instrument.

For those of small calibre, or when for any reason, such as sudden retention, speedy relief is demanded, there is provided a flexible tunneled tip instead of a bulb. Having first introduced a long whalebone filiform bougie, the tunneled tip can be slipped over it as a guide and safely carried through the obstruction. Then projecting the blade, and there is a broader one for such cases, the canal can be correspondingly enlarged. Without removing the guide a tunneled catheter can be passed over it into the bladder.

As before stated, however, it is my belief that strictures below 20 French are more satisfactorily treated by gradual dilatation than by any immediate method. Still, some urethrae will not tolerate the repeated use of any instrument. Then it is better, under an anæsthetic perhaps, to operate by divulsion, internal urethrotomy, or better than either, by a combination of divulsion and incision. It may also happen that the patient or surgeon lacks time for any prolonged method. Besides, there is a class of cases, by no means small, that cannot be cured or even much relieved by gradual dilatation, and usually described as resilient strictures. For such we are compelled to adopt more radical treatment. Other reasons demanding operation might be mentioned.

Since this instrument was devised it has come to my notice that the idea of adapting the size of the bulb to the calibre of the constriction is not an original one. But I know of none other which combines the principles of the bulbous bougie and urethrotome that is applicable to the treatment of strictures of all calibres below 30 F.

In addition to the tunneled tip, each instrument is provided with five bulbs, numbered, 15, 18, 21, 24 and 27 F.

If more are needed they can be easily obtained at small expense. In the absence of a set of bulbous bougies, it would be advisable to have several others of different sizes—so provided there is no need of other exploring bougies. The curved tip permits a ready introduction to the deepest parts of the urethra.

Let me now relate a single case to illustrate the working of this instrument.

June 7, 1873.—L. M., aet. 40, consulted me for copious gleety discharge, which had lasted twelve years. Urination frequent, slow and painful. Meatus and adjacent portion of urethra contracted and indurated from old chancroidal cicatrices. Six other strictures, at distances from the meatus of about 1½, 2, 2½, 3¼, 4½ and 6 in. The one at 3¼ in. admitted only a No. 14 F. bougie, and felt like a large shot beneath the skin. Enlarged to 30 F. the meatus and as far back as the fossa navicularis. Then with conical bougies dilated the canal to 21. It was a slow and painful process, the bands at 1½ and 3¼ in. especially, grasping the bougie very firmly. Treatment was omitted fourteen days, when his urethra, except at meatus, was as contracted as when first examined. It was again dilated to be followed by like recontraction. It was done a third time and with precisely the same result. These proceedings lasted from June to October.

Oct. 1, 1873, assisted by Dr. Wunderlich, attempted, with Thompson's Divulsor modified by Gouley, to incise the band at 3¼ in. from meatus. But we had the usual difficulty with this instrument of not being able to prevent the stricture from slipping off the greatest convexity of the dilating bars. We finally enlarged it to 22 F.

Oct. 24.—With my instrument, now shown, then just devised and less perfect than this one, we again incised the same constriction on roof, using bulb 22. Then with bulb 25 incised on the floor of urethra. Coming outwards cut on floor a slighter band at 2½ in., a third at 2 in., a fourth at 1½ in., and finally the remains of one at the fossa navicularis. Here were five strictures within four inches of the meatus, incised at one time with a loss of not more than two drachms of blood. Immediately passed solid sound 29 to bladder. No. 25 was passed every second day for a week, when 29 was again introduced. All his uncomfortable symptoms were relieved, a full stream of urine restored, and scarcely a trace of gleet remained, when he left the city for eight months. On his return a bulbous bougie No. 23 passed readily, but detected some roughness of canal at each point incised. The two bands nearest meatus being well defined, were again cut, using bulbs 23 and 26. Afterwards

passed 27 bulbous bougie to bladder without the least difficulty. Still had a slight gleet. The stricture at $4\frac{1}{2}$ in., which had not been operated on, grasped solid sound 29 rather firmly.

Oct. 5, 1875, two years after first operation with bulbous bougie No. 26, find slight hesitation at $2\frac{1}{2}$ in. and $4\frac{1}{2}$ in. from meatus. The former strictures at $1\frac{1}{2}$, 2 and $3\frac{1}{4}$ in. were not felt. The induration at latter point, so distinct two years ago, had quite disappeared. This case has been detailed somewhat minutely because the first operated on, and one more than usually difficult. Not an unfavorable symptom arose during the treatment.

The two instruments are presented together, each one being in a certain sense the complement of the other. The second and smaller may be employed as preparatory to the use of the first, yet for the treatment of appropriate cases each is complete in itself.

The regular monthly meetings of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The June meeting will be held on the 20th, at which time there will be presented the following papers:

An Epidemic of Measles, by Dr. L. S. Pilcher.

The Electrolytic Treatment of Nævi, by Dr. G. M. Beard.

Steatomatous Tumors obstructing Labor, by Dr. E. N. Chapman.

Hydatids in the Liver treated by Cauterization, by Dr. H. J. Garrigues.

——The American Medical Association will commence its twenty-seventh annual session in the city of Philadelphia, Pa., on Tuesday, June 6, at 11 A. M.

——The Medical Society of the State of New York convenes in Albany, on Tuesday, the 20th of June.

——The Secretaries of County Medical Societies receiving this number of the "Proceedings" will confer a favor by sending us a copy of their Manual and By-Laws.

BY-LAWS OF THE PATHOLOGICAL SECTION.

ARTICLE I.

NAME AND MEMBERSHIP.

This organization shall be known as the PATHOLOGICAL SECTION OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, and shall consist of members of said Society in good standing who shall be proposed and seconded by two members of the Section, shall be elected by a two-thirds vote at a subsequent meeting, shall subscribe to these By-Laws, pay the initiation fee, and present a morbid specimen with a written history of the same.

ARTICLE II.

OBJECTS.

Its objects shall be improvement of its members in Pathology, Diagnosis and Treatment of Disease as founded on Pathology.

ARTICLE III.

OFFICERS.

Its officers shall be a President, Vice-President, Secretary, Treasurer and Editor of Transactions, all elected at the annual meeting.

ARTICLE IV.

PRESIDENT.

The President shall preside at all meetings and shall have a casting-vote; shall preserve order and decide all questions of order, subject to an appeal to the Section. He shall appoint all committees authorized by the Section, unless otherwise specially ordered.

ARTICLE V.

VICE-PRESIDENT.

The Vice-President shall be ex officio Chairman of Committee of Publication, and shall discharge the duties of the President in the event of his absence or disability.

ARTICLE VI.

SECRETARY.

The Secretary shall preserve minutes of the proceedings, and shall receive all histories, reports of Committees and illustrations of specimens, and shall deliver the same into the hands of the Editor of Transactions, within six weeks after their approval.

ARTICLE VII.

EDITOR AND COMMITTEE ON PUBLICATION.

The Editor shall prepare from the above-named material such portions as shall be approved by the Publication Committee, and shall arrange them for the press; but the Section shall decide upon their publication after the Editor shall have submitted the estimated cost thereof.

The Committee on Publication, shall consist of the Editor, the Secretary, the Vice-President (Chairman ex-officio), and two other members of the Section, annually elected by ballot.

ARTICLE VIII.

TREASURER.

The Treasurer shall take in charge all funds, and have power to employ a collector at the expense of the Section; keep an account of all receipts and disbursements, and pay all just demands. He shall make a statement of receipts and disbursements of the preceding year at each annual meeting, and shall report at that time the names of all members in arrears of dues, and the respective amounts.

ARTICLE IX.

COMMITTEE ON ETHICS.

The Section shall annually elect five members as a Committee on Ethics, to whom all questions relating to ethics shall be referred.

ARTICLE X.

COMMITTEE ON MICROSCOPY.

The Section shall elect at each annual meeting three of its members as a Committee on Microscopy, whose duty shall be to examine all specimens presented to the Section and to make a report thereon.

ARTICLE XI.

INITIATION FEE, DUES AND ASSESSMENTS.

The initiation fee shall be two dollars ($2) and shall include the dues for the current year.

The annual dues shall be one dollar ($1), payable in advance on the night of the annual meeting. Assessments may be levied on the members at any meeting by a two-thirds vote.

ARTICLE XII.

MEETINGS.

The stated meetings shall be held on the 2d and 4th Thursdays of each month (July and August excepted). They shall open at 8.15

P.M., and close at 10 P.M. promptly. Special meetings shall be called by the President on a requisition signed by five members. The annual meeting shall be held on the 2d Thursday evening of January.

ARTICLE XIII.

ORDER OF BUSINESS.

1. Section called to order.
2. Minutes of preceding meeting.
3. Report of Committee on Microscopy.
4. Presentation of specimens and remarks thereon.
5. Executive session.
(a). Minutes of previous executive session.
(b). Report of Committee on Ethics.
(c). Propositions for membership.
(d). Election of members.
(e). Any other executive business.
6. Adjournment by limitation.

ANNUAL MEETING.

1. Minutes of previous annual meeting.
2. Report of Treasurer.
3. Report of Publication Committee.
4. Election of officers.
5. Election of Committee on Microscopy.
6. Election of Committee on Ethics.
7. Election of Committee on Publication.

(All elections shall be by ballot and by a majority of members present.)

8. Any other annual business.

ARTICLE XIV.

QUORUM.

Five members shall constitute a quorum for ordinary business, and eight for executive business.

ARTICLE XV.

DISCIPLINE.

All questions of Ethics shall be adjudged in accordance with the code of Ethics of the American Medical Association, and that of the Medical Society of the State of New York.

There shall be three degrees of discipline: admonition, suspension and expulsion.

A charge against a member for violation of aforesaid code of ethics shall be made in writing, signed by the member making the charge, enclosed, sealed and endorsed "Charge against a member," given to the President, and by him submitted to the Committee on Ethics.

The Committee shall furnish any member of the Section against whom a charge may have been preferred a copy of the same, notify the accuser and accused to appear before them, take testimony and hear the defense.

Whenever the Committee is prepared to report, the Secretary shall be required to notify the Section to that effect.

For admonition, a majority vote of the members present shall be sufficient.

For suspension, a two-thirds vote, and for expulsion, a three-fourths vote shall be required.

ARTICLE XVI.

AMENDMENTS.

These By-Laws shall take effect immediately, and may be amended only after one month's notice of the same, in writing, shall have been submitted through the Secretary to the Section, and a three-fourths vote shall be necessary to adoption.

Any By-Laws may be suspended at a stated meeting by a two-thirds vote.

OFFICERS.

President, C. H. Giberson, M.D.; *Vice-President*, Frank W. Rockwell, M.D.; *Secretary* and *Treasurer*, N. B. Sizer, M.D.; *Curator*, T. R. French, M.D.; *Editor*, Arthur Mathewson, M.D.; *Committee on Microscopy*, Drs. Segur, Mathewson and Sizer; *Committee on Publication*, Vice-President, Editor, Secretary and Dr. Rushmore.

MEMBERS.

Drs. Thayer,	Drs. Snively,	Drs. Griffiths,
Colton, F. H.,	Sparrow,	Bunker,
Segur,	Hopkins,	French,
Mathewson,	Hutchison, J. C.,	Sizer,
Wunderlich,	Smith, G. K.,	Lowell,
Elmendorf,	Freeman,	Stuart,
Prout,	Skene,	Wight,
Corbally,	Raymond,	Giberson,
Byrne,	Rushmore,	Hesse,
Wyckoff,	Mitchell,	Hutchison, N. G.,
Burge,	Wilde,	Jewett, C.,
Mason, L. D.,	Rockwell,	Westbrook,
Fearn,	Sherwell,	Gerster,
	Schenck, P. L.	

EDITORIAL NOTES.

——Dr. Warburg's Tincture.—In *The Lancet* of November 13th, Prof. Maclean, of Netley, England, gives the formula for the preparation of this remedy and adduces considerable proof of its efficacy in malarial fevers. The rules for the use of the remedy, as given by Dr. Maclean, are as follows: "One-half ounce (half of a bottle) is given alone without dilution, after the bowels have been evacuated by any convenient purgative, all drink being withheld; in three hours the other half is administered in the same way. Soon afterwards, particularly in hot climates, profuse, but seldom exhausting, perspiration is produced; this has a strong aromatic odor, which I have often detected about the patient and his room on the following day. With this there is a rapid decline of temperature, immediate abatement of frontal headache—in a word, complete defervescence—and it seldom happens that a second bottle is required. If so, the dose must be repeated as above. In very adynamic cases, if the sweating threatens to prove exhausting, nourishment in the shape of beef tea, with the addition of Liebig's extract, and some wine or brandy of good quality, may be required. The following is the formula: R. Aloes (socotri) libram, Rad. Rhei (East India), Sem. Angelicae, Confect. Damocratis, (this confection, which consists of an immense variety of aromatic substances, was once officinal, and is to be found in the Ph. Lond., 1746) ana uncias quatuor; Rad. Helenis (s. enulae), Croci Sativi, Sem. foeniculi, cret. praeparat (Dr. Warburg says this ingredient was added to correct the otherwise extremely acrid taste of the tincture. Many other substances were tried, but none answered so well as prepared chalk) ana unc. duas; Rad. Gentianae, Rad. Zedoriae, Pip. Cubeb., Myrrh. elect., Camphorae, Boleti Laricis (this is the Polyporous laricis—P. Officinalis, Boletus purgans, or Larch agaric—"formerly," says Pereira, "used as a drastic purgative, and still kept by the herbalist") ana unciam.

The above ingredients to be digested with 500 ounces of proof spirit in a water bath for twelve hours; then expressed and ten ounces of disulphate of quinine added; the mixture to be replaced in the water-bath till all quinine is dissolved. The liquor, when cool, is to be filtered, and is then fit for use.

——The State Medical Society, at its last meeting, was addressed by the President, Dr. Fisher, on the subject of the apparently unjust system of representation now in operation—a system made years ago,

before the days of the telegraph and steam, when there were fewer physicians in the State than there now are in a single county. In the course of his remarks he said: "Kings County, which is entitled to ten delegates, complains that its total number of permanent members, up to the present time, is only nine, while the four following counties, with a representation of one delegate each, have fifty-one, Herkimer having fifteen, Chenango fourteen, Montgomery and Broome eleven each. That the injustice of this disparity is only apparent, and not real, will be manifest when the fact is known that Kings County has not had a single person on the list as eligible since 1870" (page 64, Transactions, 1875). On page 40, same volume, we read that two names had been by error omitted from that list since 1872. Of this error, Dr. Fisher was no doubt uninformed. If it were permissible to criticise a presidential address, it might be said that our Society has taken no action, has not discussed this question. The number of our delegates is nine. Of our permanent members, now living in the county, five were regularly elected; two were irregularly elected from other districts while living here; one was a permanent member before coming here, and one has removed from County and Society: these added make *nine*. If we compare further the counties above-mentioned, and add New York, we find a greater disparity.

	Herkimer.	Chenango.	Montgomery.	Broome.	Total of four Counties.	Kings.	New York.
Population (1870)	40,000	40,000	35,000	45,000	160,000	420,000	940,000
Medical Population (in Co. Med. Societies).....	28	57	30	40	150	214	550
No. Del. elected every 4 years..	1	1	1	1	4	9	21
No. admitted to eligible list since 1857, incl.....	9	8	5	9	31	17	68
No. elected permanent members since 1857.	8	7	5	7	27	7	36
Per cent. to Med. Population.....	.....	.....	.....	.....	.18	.03	.065

If the comparison is carried further back than 1857, the disparity appears still greater. A Special Committee, consisting of Drs. Fisher, Wey and Prout, were appointed to report upon this antediluvian system at the next State Convention.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1876.

President.....ALEX. HUTCHINS, M. D., 796 DeKalb Av.
Vice-President.....J. S. PROUT, M. D.
Secretary.....R. M. WYCKOFF, M. D., 532 Clinton Av.
Assistant Secretary.....J. D. RUSHMORE, M. D.
Treasurer.....G. G. HOPKINS, M. D., 186 Gates Av.
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Orator.....J. H. RAYMOND, M. D.
Alternate Orator.....W. E. GRIFFITHS, M. D.

CENSORS.

A. Mathewson, M. D., (Senior Censor), 17 Clinton St., J. H. H. Burge, M. D.,
G. W. Baker, M. D., R. M. Buell, M. D., Chas. Jewett, M. D.

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(1874 to 1878.)

Drs. J. S. Prout, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. H. H. Burge, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

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COMMITTEES OF THE SOCIETY.

HYGIENE.

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REGISTRATION.

Drs. C. H. Giberson, W. E. Griffiths, Drs. W. G. Russell, N. Matson, F. W. Rockwell. Drs. R. M. Buell, W. F. Sanford,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. Corey, B. A. Segur, S. G. Armor, J. S. Prout.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

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Physicians who may favor me with their patronage may depend on the purity of Drugs and correctness of Prescriptions dispensed.

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Graduate of the N. Y. College of Pharmacy,

CORNER DIVISION AVENUE AND FOURTH STREET, BROOKLYN, E. D.

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BROOKLYN, – N. Y.

CHARLES DENNIN,

DRUGGIST AND APOTHECARY,

FIRST PLACE, COR. COURT STREET,

BROOKLYN, N. Y.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, JUNE 20, 1876.

AN EPIDEMIC OF MEASLES.

BY L. S. PILCHER, M.D.

The Brooklyn Protestant Orphan Asylum, at the beginning of the present year, 1876, contained about 300 children, whose ages ranged from 2½ to 15 years. Among these children an outbreak of measles occurred, extending through the last half of January and the first half of February, during which 46 were attacked and three deaths occurred.

January 7th a child, aet. eight, returned to the Asylum after an absence of two weeks. January 15th he broke out with measles. For the three days immediately preceding the appearance of the eruption he had been suffering from catarrhal laryngitis of considerable intensity, during which time he had been separated from his usual companions. The room in which he was kept while thus ill was, however, the one devoted to the reception of all the younger children, all of whom were necessarily continuously exposed to the infection arising from his presence during these three days. Immediately upon the appearance of the eruption he was placed in a room by himself.

January 24th, the tenth day after the appearance of the eruption in the first case, and the thirteenth after his removal from among his fellows, eight other children developed measles; the next day three more; the day after two more; and the third day ten more—23 in all.

Of this number 11 were from among the larger children, who, being kept in another part of the building, could not have come in contact with the first case after his removal from among them from thirteen to fifteen days previously. The remaining 12 cases were among the nursery children, among whom he had been kept during his croupy attack, until the appearance of the eruption. Of the 11 larger children nine were boys, a fact worthy of note, as showing that the boy, their playfellow, who had been first attacked, was the common source of infection to them all.

At varying intervals 17 of the nursery children were taken down. After the appearance of these cases more than a week elapsed, during which none of the larger children were attacked; then another outbreak occurred, and in rapid succession 17 more cases, all among the larger children, developed themselves, the second crop from the original seed. No new cases appeared after February 7th. Of the cases thus recounted, 46 in all, 28 occurred among the boys, 18 among the girls, 17 among children five years of age and under, 29 among those over five years of age. The type of the disease was severe, more especially among the younger children, numbers of whom were left much debilitated upon the subsidence of the eruption. Many of the cases among these younger children also had been complicated by diarrhœa to such an extent as to demand special medication for its control. No troublesome affections of the eye or ear complicated convalescence in any case.

The three fatal cases were from among the younger children, the oldest being five years of age, the other two being each about three.

Receiving the same treatment, the same care, their surroundings being the same, and their apparent general physical condition equally as good as their fellows about them, without assignable cause, while the eruption was subsiding a capillary bronchitis was developed in each of them, terminating in œdema pulmonum, and in death on the 8th, 4th, and 5th days respectively, the oldest child living the longest. In the two first cases post-mortem examinations were made. The appearances presented in each were almost identical, so that one description answers for both. Upon opening the thorax, the lungs did not collapse, but continued to fill the whole cavity. Along the anterior edge of both lungs there were air-sacs of varying size, some quite large, lifting the pleura from the subjacent pulmonary tissue—*interlobular, subpleural emphysema.*

The anterior and upper surfaces of the lungs, extending in depth but a very little distance, were anæmic in appearance, cushiony to the touch, the individual alveoli perceptibly enlarged—*vesicular emphysema.*

The great mass of each lung, however, was intensely congested, the hyperæmia being the most intense at the base and posterior parts. It was bloated, soggy to the touch, but still slightly crepitant and elastic. It floated in water. Upon incision a copious drainage of bloody, frothy serum ensued—*acute œdema.*

No points of pneumonic solidification were detected. In the third case no post-mortem examination was made, but as the symptoms and physical signs of this case resembled very closely those of the other two, the inference is fair that the morbid conditions were similar.

Of the cases that recovered, that of the boy, the unfortunate importer of the disease into the institution, was complicated by an attack of *œdema glottidis,* which very nearly proved fatal. The history is as follows : It will be remembered that in his case the premonitory stage had been marked by a smart attack of catarrhal laryngitis. Under treatment this had been much relieved, and had ceased to be a matter of concern. His croupy symptoms, in the early part of the afternoon of the second day of the eruption, were aggravated. As the day wore on the dyspnœa resulting became more and more intense. When I reached his bedside at 5.30 P. M., he was unmistakably *in articulo mortis;* face pallid and bedewed with clammy perspiration, eyes glazed and staring, lips livid, respiratory efforts shallow, weak and ineffectual, insensibility complete.

From this condition of impending death, the immediate performance of tracheotomy was successful in rescuing him. No anæsthetic was needed ; no sign of consciousness was made by him until after the trachea had been opened and the air was again freely entering his lungs. On the fourth day thereafter it was found possible to dispense with the tracheal canula. His measles meanwhile passed through their usual course to convalescence and the wound in the neck rapidly healed, so that in ten days he was assisting in taking care of others who had fallen sick.

The misfortunes of this lad, however, were not to end here. Complete cicatrization of his wound had just been fairly effected, when on the sixth of February, as the result of exposure to draughts, he was attacked anew with a severe acute *laryngitis.* A course of steam inhalations, embrocations of hot oil, hourly doses of muriate of ammonia, chlorate of potash and veratrum viride, was instituted and persevered in for five days. During the third day a very free secretion of viscid mucus took place, which produced much temporary relief. After its continuance for about twenty-four hours, the expectoration again became scanty, and all the symptoms more aggravated. By the fifth day

his condition seemed very critical; the respiratory efforts, though very labored, had up to this time been sufficient to fairly oxygenate the blood. Now there was much general prostration and an increasing dyspnœa, with a tendency to cyanosis. His exhaustion was largely due to his prolonged labor in respiration. I determined to subject him again to *tracheotomy*, which was done at midnight of February 10th, with the assistance of Dr. Mulligan, then interne of St. John's Hospital.

Chloroform was administered. The patient rallied well from the operation. The transition from great suffering to complete comfort was immediate and striking. In addition a supporting treatment only was instituted. For some days the patient's general condition remained critical; pulse persistently above 150 per minute, temperature 101° to 103° F.; cough frequent and loose; respiration somewhat accelerated, but unimpeded. Upon the fifth day after the operation, being the tenth of the attack, some improvement was manifested. From this date a slow and gradual convalescence began. Five days later an attempt to dispense with the canula was made, but a condition of laryngeal spasm was provoked thereby that necessitated its instant replacement.

February 26th it was again removed, unattended with trouble, and permanently laid aside, after a residence in the trachea of 16 days. The fistula remaining quickly closed, and perfect restoration to health in due time ensued. Throughout this case there was no evidence of any pseudo-membrane having been formed. Much and careful afterthought upon this case has confirmed me in the conviction that I did well in not deferring the operation of tracheotomy till the patient was *in extremis*. To be sure, the bare possibility exists that the tracheal stenosis might not have become so great at any time as to make respiration sufficient for maintaining life impossible, and that fatal general prostration might not have ensued before the self-limitation of the disease should have brought relief. Every indication, however, pointed to the contrary result. The imminent danger of the development of those attendants upon prolonged laryngeal stenosis, viz., pulmonary congestion, œdema, emphysema and atelectasis; the possibility of the sudden occurrence of œdema glottidis at a time when help could not be obtained; the failure of ordinary treatment to bring relief; these considerations, added to the great exhaustion already present from the prolonged dyspnœa, combined to form a condition in which to have delayed tracheotomy would have been irrational, unprofessional, culpable. The happy and complete recovery of the patient is, perhaps, the best indication of the wisdom of the course adopted.

The complications which have been noted in this recital are nothing new in the history of measles. Some degree of laryngitis, indeed, is always present in this disease, is one of its characteristic features. Laryngitis exanthematica has its recognized place in our nomenclature of diseases.

That it should become intense enough in its development to become a source of immediate danger I believe to be rare; that it may do so is abundantly illustrated by the experience I have detailed. The caution, therefore, is not a useless one, that the condition of the larynx should always be a matter of concern in any case of measles.

After the relation to a professional friend of the facts of the imminent danger of death of this boy from suddenly supervening œdema of the glottis, he exclaimed that he could now understand what had taken place in the case of a patient of his own, a most interesting child, whom at one visit he had left doing well, undergoing an ordinary attack of measles, but whom, when next he called, he found dead. All that the parents could tell him was that the child had seemed to experience difficulty in breathing, and that before they realized there was any danger —the case being one of *only measles*—it was dead! Hitherto my friend had been puzzled to account for the event. In the light of this case he was satisfied that a similar condition had caused the death of his own patient.

The more extended experience of others may add still other cases to these.

PRACTICAL POINTS IN THE ELECTROLYTIC TREATMENT OF NÆVI.

BY GEO. M. BEARD, M.D.

Nævi may, for convenience of description, be divided into three general classes:

1. Those which are beneath the skin and do not affect the surface except through pressure.
2. Those which are in the skin—the so-called port-wine stains.
3. Those which are raised more or less above the surface of the skin.

When left to themselves nævi, according to the surgical authorities, act quite differently with different individuals.

Some shrivel up and leave no trace of their existence save a stain on the skin; others increase considerably in size, and may degenerate into malignant or semi-malignant growths.

Subcutaneous nævi sometimes develop into formidable proportions and endanger life. The majority become permanent deformities, such as we see every day on the streets.

The electrolytic treatment of nævi must vary with the different varieties, and the results of the treatment also vary. Subcutaneous nævi are to be treated like aneurisms, which they resemble. Insulated needles are inserted, and one pole—by preference the positive—may be used, while the negative pole applied on some convenient indifferent point completes the connection. Or, if the tumor be large, both poles may be attached to needles.

The positive clot is harder and more adherent than the negative clot, but it is smaller, and more time is required when only the positive pole is connected with the needles.

The danger to be guarded against in the electrolysis of this form of nævi is that too strong currents may be used, or used for too long a time, and so inflammation may be excited at the base of the tumor, it may be, or in the skin. This accident happened to me in one case that I treated for Dr. Post at the Presbyterian Hospital. The tumor, which was very large, was on the side of the head and forehead, was twice treated by electrolysis, and after each operation unpleasant symptoms occurred, notwithstanding which there was complete recovery; but such accidents are rare and can be guarded against. I have never known or heard of death occurring after electrolysis of a nævus, although that method is now widely used in this country and in Europe. Nævi which are raised above the surface of the skin can be treated by uninsulated needles, and strong or mild currents, according to the size. Sometimes it is well to cause perfect destruction of the tissue with the expectation that there may be subsequent sloughing to a slight extent, and very likely something of a scar. In such cases it is usually difficult and oftentimes impossible to avoid some scarring; but the scar may be infinitely preferable to the tumor.

The forms of nævi that are hardest to treat are the so-called "port-wine stains." I have tried these by mild and by strong currents, and by various methods of placing the needles. In one case where there was a stain about one inch long and one-half of an inch wide in the middle of the forehead of a little girl, I succeeded in reducing it so that now only a small red area remains; and this can, I think, be disposed of by another operation. In another case that I saw with Dr. Dodge the

needles went too deep, and the operation was somewhat prolonged and consequently contraction followed. It would have been better if nothing had been attempted.

The difficulty in treating these cases is to know just when to leave off. If we do too little the operation must be frequently repeated—if we do too much scarring or bad cicatrization may result.

I have not fully made up my mind as to the best method of treating these port-wine stains, whether to push the needle through the skin and work beneath it in various directions, or to stick the needle in the skin by a kind of tattooing arrangement. I prefer the so-called "Glover's needles"—they enter the skin easily and are readily manipulated.

In regard to the other varieties of nævi, the great point is to decide the comparative merits of electrolytic treatment and ordinary surgical treatment. This point in the minds of many is already decided; the evidence in favor of electrolysis is certainly accumulating.

The experiments have been made by those who are practically familiar with all ordinary surgical methods. Most of my cases have been treated with surgeons who had previously tried injection of iron, hot needles, etc. In one case that I saw with Dr. Burge, an infant, there was a nævus about the size of a pea on the nose. It had been operated on a number of times by injection and no progress had been made. A few minutes of electrolysis caused coagulation, and in a few weeks nothing remained but a red spot of the size of a pin-head, which can be disposed of any time if it should not disappear of itself. In another case where a large nævus, somewhat elevated, deformed the cheek of an infant, and which had been operated on many times by mild electrolysis before I saw the case, without effect, I resorted to a very thorough operation, inserting the needles at the base, in short, treating the tumor as though it were malignant; the result was a complete destruction of the growth after two operations. A scar is left, as was inevitable after such an operation, but it is a deformity infinitely preferable to the tumor.

I may close with these three suggestions:

1. The after-effects of electrolytic operations for nævi are sometimes not completed for many weeks and months. It is sometimes necessary to keep watch of a case a very long time before we can determine whether or not perfect absorption will result. Immediately after an operation the tumor may be hard and black, and for weeks and months there may be discoloration, which fades away so gradually that it seems to be stationary. In several instances I have concluded that an operation has failed in whole or in part, but on seeing the case many

weeks later have been gratified to find that I was mistaken. Quite recently I met Dr. Bird, of this city, for whom I operated in a nævus in the face of a little girl in 1874. He told me that the result was entirely satisfactory, although for months subsequent to the operation there was discoloration. In this case the parents refused to have ether administered; consequently the needles were inserted and kept in position with great difficulty, and were taken out sooner than they would have been, but for the screams of the child and impossibility of holding the head still.

2. It is better, in some cases, to operate a number of times than to attempt to destroy the tumor by a single and severe operation. It may be advisable to have quite long intervals between the operations, in order that the full after-effect of each may be obtained. By this cautious method of procedure we may succeed in ultimately removing the growth with little or no scar, whereas a severe operation might be followed by sloughing and cicatrization that would be a permanent deformity. As already suggested, the great task in these cases is to know how far to go and just when to stop. In this respect every case must be studied by itself.

3. In operations of this kind anæsthetics are almost indispensable. It is pretty well settled that young children bear chloroform as they bear milk. To operate on these little ones without an anæsthetic—either chloroform or ether—is needless cruelty. Moreover, there is serious difficulty in holding and manipulating the needles while the patient is squirming in agony; and even the coolest operator may have his attention distracted by the cries and struggles of the child.

The fear that the brains and nervous systems of infants may be injured by the reflex effects of the electric currents in these operations on the face and head has no foundation in experience. Young children seem to bear electricity better than adults; to say the least they bear it sufficiently well for all the purposes of electro-surgery. I have operated on a large number of children of all ages, between a few months and a few years, and I have yet to see any injurious after-effects on the nervous system, save in the one case already cited, when the unpleasant symptoms that followed were due unquestionably to the local inflammation excited by keeping the needles too long in one position in the scalp. In medical as well as surgical applications, children, as I have elsewhere remarked, do not appear to be as susceptible to electricity as adults.

HYDATIDS IN THE LIVER TREATED BY CAUTERIZATION.

BY H. J. GARRIGUES, M.D.

This is in part a reproduction of an article by me, found in the *Hospital Journal* of Copenhagen, 1873, but in the hope of rendering it more interesting to you I have added to it a brief statement of facts known by the profession in Denmark, but that can scarcely be supposed to be so here.

Dr. Austin Flint says, in his work on the *Principles and Practice of Medicine*, that hydatids in the liver are extremely rare in this country, and so they are in Denmark; but on the other hand it is extremely common in a dominion subject to the Danish crown, viz., Iceland, and this is the reason why Danish authors have contributed so much to illustrate its nature, its history and its treatment. Whilst the late Professor *Eschricht*, Drs. *Krabbe* and *Rasmussen* have had a great share in finding the development of the animal and its relation to the *Tænia echinococcus* in the dog, *Dr. Finsen* has viewed it from the point of the practitioner, and given a description of the disease caused by it in Iceland, based on a much larger material than has been accessible to any other observer. During the nine years, 1857–1865, he treated no less than 255 cases of hydatids, of which 176 were situated in the liver. I have myself translated Dr. Finsen's paper for the *Archives générales de Médicine*, Paris, 1868, and an extract of it has appeared in the *British and Foreign Medico-Chirurgical Review*. The treatment advocated by the doctor is that of *Récamier*, which consists in producing adhesion between the cyst and the abdominal wall by cauterization and then opening the hydatid. Whilst the operation has been performed rarely in France, where it originated, Dr. Finsen has undertaken it forty-three times in forty patients, one being operated for two, and another for three abdominal hydatids. Of these forty patients, five, by various reasons, gave up the treatment before the opening of the hydatid, so that the operation was carried through for thirty-eight hydatids in thirty-five patients. Twenty-eight, or four-fifths, of these recovered, seven died, and in five or six cases the deaths seem attributable to other causes than the operation. In so dangerous a disease and by so hazardous a treatment, this must be regarded as a fair result if we count all the dead, and as a most extraordinary one if we

leave out the cases where death was or seems to have been due to other causes, as cancer, diphtheria and influenza. Dr. Finsen used Vienna paste, in which he substituted calcinated magnesia for the lime, and in the last year he employed sometimes Canguoin's paste, equal parts of chloride of zinc and amylum, after the skin had been destroyed by Vienna paste, and he thinks that he can corroborate the assertion that it works better in the deeper tissues. He applied the caustic on the most prominent and most fluctuating part of the tumor and left it there for fifteen minutes. Three days after he split the eschar in its longest diameter and put in new paste. Three days later he dissected away the new-formed eschar, and so forth continued to take off the eschar and cauterize every third day until the hydatid burst spontaneously, or appeared at the bottom as a bluish vesicle, when he opened it with a lancet. The length of time that passed before the opening of the hydatid varied between a fortnight and six months. When the hydatid contained *daughter vesicles*, the smaller of them were evacuated spontaneously through the channel made by the caustic; the larger that appeared at the bottom of it he punctured with a lancet, so as to empty their contents, after which the vesicle generally came out spontaneously, or, when it did not, was drawn out with a forceps. After having emptied the hydatid as much as possible, he inserted a strip of lint into the cyst, both in order to keep the canal open and to avoid the annoyance of a constant discharge. Finally he put on a binder. In the beginning he injected daily after the first week equal parts of tincture of iodine and water, with a little iodide of potassium, but seeing violent pains follow these injections in some cases, and not finding any difference in the course of the disease when they were not used, he later employed them only when the discharge became thin, discolored and fetid, or when the fistula left was slow to close. The time between the opening of the hydatid and the period when only a fistula was left has varied from one to three months. The fistula itself has in some cases healed quickly, in others it has remained open more than a year, but in all those who recovered it has finally closed.

The cauterization always succeeded in bringing about a sufficient adhesion between the abdominal wall and the hydatid, even when it was unusually small, and so mobile that the doctor had to fix the tumor with his hand. This adhesion is of course brought about by inflammation, but all the post-mortem examinations showed this to be limited to a few lines around the wound, whereas there was no trace of peritonitis in the abdominal cavity. Moreover, symptoms of peritonitis did not occur once in the 38 operations performed.

It has been objected to the method of *Récamier* that it is painful. Without denying this, Dr. Finsen thinks that the idea formed of the pain is exaggerated. He found it never necessary to have recourse to anæsthetics, and relates of two children, aged 6 and 9 years, that they as often did not cry under the cauterization as the contrary. The pain was of short duration, sometimes passing off immediately, and generally in the course of a few hours.

Afterwards Dr. Finsen left Iceland, and his successor, *Dr. Jonasson*, followed the other principal treatment, viz., puncture. He used simple puncture, and if the contents of the hydatid were clear, he drew the canula out immediately, in which way he has cured three patients by a single puncture ; but generally the tumor reappeared, and on repeating the puncture he always found the contents more or less purulent. Then he left the canula fast five to seven days, stopping its aperture with a cork, which he removed once or twice a day. After having taken the canula out, he introduced sponge tents every day, and dilated the aperture till about half an inch in diameter. When it had reached this size, he got the tunic proper of the hydatid, the so-called *cuticula*, and often daughter vesicles, out by injecting tepid water, or by sucking them out with the little sucking-cup used for taking the milk from the breast. He tried later to substitute aspiration for simple puncture, but was obliged to abandon it, the canula getting stopped by daughter vesicles. He treated in all 28 patients by puncture, of which 14 died, and in his last report he says: "As I have not obtained a satisfactory result during these latter years by my former treatment, I have now resolved to try the method by cauterization." He gives the history of one case where he had done so with perfect success,* and recently he has published three other successful cases.†

In other countries puncture is recommended as the best treatment. *Simon*,‡ in Germany, treated six cases by double puncture and incision of the intervening tissues, and saved all the patients. *Jaccoud*,§ in France, treated three patients, the two first by simple puncture, the last by aspiration, and saved them all. But these numbers are too small to make weight against the great numbers of the Danish doctors practicing in Iceland. *Murchison*,‖ in England, has collected statistics of 46 cases

* Ugoskrift for Loger, Copenhagen, 1870, 1872, 1873, 1875.

† U. f. L., xxi, 1876, p. 20.

‡ U. f. L., 3d Series, vii, 48, after Deutsche Klinik, 1866, Nos. 43 and 45.

§ U. f. L., 1873, xv, 223, after *Leçons de clinique médica les faites à l'hôpital Laribaisière*, Paris, 1873.

‖ The *Lancet*, 18th July, 1868.

treated by tapping, in 35 of which the result was completely successful; in 10 suppuration supervened, so that it became necessary to give a larger exit to the pus, and of these 10 patients eight recovered and only two died.

Here we have, indeed, a considerable number of cases, but statistics collected from different unknown sources, given without any particulars, and found in an article that is not even signed, but is a mere synopsis of what was going on just then in the London hospitals, have not the same value as the personal experience of one man who gives all the details, as Dr. Finsen and Dr. Jonasson have done. It may be that the statistics are so favorable because they are at least in part gleaned from periodicals, where we all know that people are more zealous to publish their successes than their failures. It is probable that the hydatids were fresh, or, if containing pus, adherent, and they cannot, at all events, have been of that kind which is filled with daughter vesicles and contains almost no free fluid, but this variety is not rare. Dr. Finsen found it in eight cases out of his 48 operated by cauterization, and three hydatids, which he punctured before resorting to Récamier's method, were all of this kind, and he lost all the patients.*

In so rare a disease it is natural that the treatment of the Danish physicians is decided by the great experience of their professional brethren in Iceland. I have myself witnessed and partially treated one very bad case where cauterization was followed by complete success.

K. Hansen, peasant girl, 28 years old, entered the hospital of the Sisters of Charity the 10th of October, 1871. The father died of phthisis, the mother and ten younger brothers and sisters are well. Until her present disease she had also been well herself, all functions normal.

Four years before she was admitted, the right hypochondrium began to swell and to be the seat of a pricking pain when she undertook any hard work.

After an attack of pleuritis in 1870, she often felt a pain in the right side of the chest, shooting into the shoulder. She became more weak and short breathed on exertion, but was always out of bed and could do sedentary work. Digestion and diuresis continued good. She had no icterus.

On her admission she was found of middle height, thin, without breasts, pale, with cyanotic cheeks. The front of the body, especially the right side, presented enlarged subcutaneous veins. The abdomen was very much enlarged; on the level of the cardia it measured 33

* U. f. L., 1869, vii, 220.

inches, on the level of the umbilicus 35 ; the distance from the symphysis pubis to the umbilicus was 8 inches, from the umbilicus to the processus ensiformis $7\frac{3}{4}$ inches. No marked difference between the circumference of the two sides. There was a considerable prominence of the abdomen, extending from the right hypochondrium to the left mammillary line, most marked in the cardia. Besides the lower part of the abdomen was swollen and somewhat protruding in the middle line. A tumor was found that filled the entire right half of the abdomen, and the epigastrium as far as the left mammillary line. It was formed by the liver, the anterior edge of which could easily be grasped. The right lobe extended down to the groin, from which it ascended in a curve through the umbilicus and a couple of inches above it. The left lobe descended to a little above the level of the umbilicus, and was separated from the right by a deep fissure. The edge itself was pretty sharp, and immediately within it the lobes were felt thickened, especially the left. In the cardia was found fluctuation, in the rest elastic tension. The surface was smooth. The right lobe could be moved from side to side, the left not ; the skin could be folded and moved. Sometimes a feeble *frémissement* was perceived. Below the lower ribs of the right side was felt a fluctuation that did not communicate with that in the cardia. The right hypochondrium was tender on pressure. Percussion gave in front a dull sound from the fourth rib on either side downwards, corresponding with the outlines of the tumor, and on the back all over the right infrascapular region. Respiration was not heard on the dull parts ; above it was very weak ; in the left infrascapular region it had a vigorous vesicular character. In the right infrascapular region no resonance of the voice and no fremitus were perceived. The stethoscopy of the heart was normal. By vaginal exploration nothing remarkable was found.

On the 17th of October Dr. Howitz withdrew, by a very fine aspirator trocar, a couple of ounces of a thin opaline fluid, which on microscopical examination did not show any characteristic bodies. But on the 3d of November three quarts of a light colored, opalescent fluid were evacuated by tapping, which fluid contained numerous hooklets and heads of echinococci. The next day appeared an efflorescence much like urticaria, which disappeared after a couple of days.* The tumor in the cardia had disappeared, and in its stead was heard a tympanitic sound on percussion. A week after the tapping she left her bed, and the 15th of November the hospital.

* Dr. Finsen has found that this urticaria constantly follows the extravasation of the contents of a fresh hydatid into the peritoneum, and that peritonitis only supervenes when the contents of the cyst are purulent.

A month after her return home the abdomen began again to swell, and in March, 1872, a quart of fluid was drawn off by a local physician, but the circumference of the abdomen increased again, and the 29th of May she was admitted to the Gynecological Hospital, near Copenhagen. The abdomen measured then 35 inches on the level of the umbilicus, the distance from the processus ensiformis to the umbilicus was 7 inches, from the umbilicus to the symphysis pubis 7¼ inches. The ictus of the heart was felt 1 inch below and to the left of the papilla. The hepatic dullness extended on the right side to the third intercostal space, the right to be reached down to the crista ossis ilei, and the upper end of the fissure between the two lobes was now situated two inches below the umbilicus. Below the edge formed by the ribs on the right side was found a prominent and fluctuating space large as the palm. On pressing on the swollen liver we felt a crepitation, as in tenosynitis, very much like the sensation got by pressing a snowball. It disappeared quickly, and was then felt in another place. The patient was thin and pale, not icteric. Urine normal.

The 8th of June an eschar was made by the actual cautery on the most prominent part below the edge of the ribs on the right side. Two days later the horny eschar was dissected away and Vienna paste applied for ten minutes. Two days later the new eschar was taken away in the same manner, and new paste applied. Three days later the same process was repeated, and on the next day the tendon of M. obliquus externus appeared, and moved up and down below the skin during respiration. The 17th of June the tendon was incised and the M. rectus appeared black and soft. The paste was applied for the fourth time, but as it did not act very deeply, a small incision was made through the muscle, before the paste was applied for the fifth time. The cauterization was repeated with two to four days' interval, in the beginning each application lasting 10 minutes, later 15. The paste was in all applied 17 times, the last time the 30th of July.

During the most of July and August, when the deep cauterizations were going on, when the patient was in a very alarming hectic condition, when the cyst was opened and the hydatid taken out, Prof. Howitz was abroad and had left the treatment of this interesting patient to my care. The 5th of July she had nausea the whole day and towards evening she vomited. The following day a strong *jaundice* appeared. On the 8th she had again nausea and swooned once. The 10th appeared an *erythema* on the face, the extension side of the arms, the volar side of the hands, the knees, the heels, and the anterior part of the soles of the feet. On the arms and near the knees were found red spots from the

size of a pea to that of a five cent piece, in the circumference of the continuous red surface. The sclerotics were yet slightly icteric and the urine brownish yellow. The abdomen was not tender; was the seat of spontaneous pain. She vomited a yellowish watery fluid. Pulse 108 ; temperature 100° F. She had lumps of ice to swallow, and her diet was restricted to milk. The next day the erythema had almost disappeared from the face and the arms, was still found in the other places named, and had extended over the front of the thighs and over the legs, especially the calves, and formed some spots on the abdomen. The two next days the efflorescence appeared only from time to time, especially during sleep, and was visible a couple of hours. During the following two weeks she vomited almost every day, once or oftener, her food and a bilious fluid ; she had diarrhœa ; the temperature rose to 103° F.; the pulse varied from 104 to 124, and she perspired much, especially during sleep. She was chiefly treated with opium, which evidently had a favorable effect. Under all this the cauterizations were continued.

On the 17th of July a piece of tendinous structure—probably a portion of the posterior part of the sheath of the M. rectus—was dissected out. Next the fibres of the M. transversus appeared. On the 27th I dissected again away some tendinous structure, probably part of the fascia transversa. On the 30th the bottom of the wound glided somewhat down, so that the canal formed an oblique funnel. The abdomen was then raised by a bandage with braces and thigh-straps. The next day a thin membrane appeared that was easily torn with a probe and pushed aside, when a similar white, glossy surface appeared. The caustic, that in the beginning produced a parchment-like eschar, changed the deeper layers merely into a thick, brown, gluey mass. On the 2d of August, as soon as it was applied to the said surface, a thick, greenish yellow, fetid, purulent fluid escaped ; but the stream stopped soon, the hole becoming obstructed. With a forceps I withdrew a great deal of a tough, jelly-like mass of a clear yellow color, the *cuticula*, and introduced an India-rubber tube. The fluid withdrawn amounted to three pints. I introduced a probe six inches, and although not sure of meeting with any resistance, prudence made me desist from pushing the instrument further. The tension of the abdomen diminished greatly, and the patient felt very much relieved. I put the free end of the tube in a bottle with a solution of carbolic acid, and fixed the tube to the abdomen with adhesive plaster, but the tube becoming plugged up, the fluid ceased soon to flow. In the evening a similar amount of purulent fluid was withdrawn, and a good deal of cuticula was extracted with the forceps.

Immediately after the opening of the cyst the patient improved very much. The temperature and pulse became normal, the respiration freer, the vomiting ceased, and the patient slept well. During four weeks she could not at all digest meat, which immediately provoked diarrhœa, and as it was a chief point to strengthen her and give her a nitrogenous food in order to compensate for the loss by suppuration, she got sherry, milk, as many eggs as she could swallow, and the juice of half a pound of beef every day. This juice was obtained by boiling chopped meat in a corked bottle an hour and a half, and straining, which gives a very concentrated, nutritious food, grateful to the taste and of easy digestion.

As the wound contracted much and the tube got plugged up, and as the fluid escaped around it and annoyed the patient, I introduced a short and thick one with a wooden plug, which prevented the fluid from escaping. At the same time compression was made by cotton and a binder. In the course of a week the whole of the cuticula came out, which would have filled a quart. The secretion of pus very soon diminished, which was probably due to the carbolized water with which the cyst was washed out twice a day. On the 12th of September the dullness of the liver reached only to the normal height. The lower limit had mounted somewhat, but was still found a little below the umbilicus. The beat of the heart was felt in the fourth intercostal space in the mammillary line. On the 16th she left her bed for the first time; the 23d she went out; and the 8th of October, four months after the beginning of the treatment, she walked a mile. She gained flesh, her skin got a blooming hue, and she felt perfectly well. When she left the hospital on the 4th of December, in order to continue the treatment at her provincial home, the canal of the wound had the calibre of a quill, and the cavity could scarcely hold two ounces of water.

This was a very bad case, and the final result was most satisfactory. In so far it speaks in favor of the treatment adopted, and if called to a new case I would follow the same principle; but, on the other hand, I think that much time was wasted in these repeated cauterizations. A week with three cauterizations brought us only through the skin and subcutaneous cellular tissue, a result that might have been reached with much less pain in a second by an incision. A month—in which the cauterization was repeated nine times, and the knife used to split the aponeurosis of M. obliquus externus and part of the M. rectus—elapsed before we reached the posterior layer of the sheath surrounding this muscle.

I think that we might even have saved all this time by cutting through the aponeurosis and the muscle. Upon the whole, I think that

we may *cut layer by layer, until only one muscular or aponeurotic layer of the abdominal muscles is left, and then apply the caustic.* How many layers we have to cut will depend on the locality. It is not only tedious but useless to cauterize all the tissues; and if we leave one layer between the caustic and the peritoneum, this will give sufficiently adhesive inflammation to secure the adhesion between the liver and the abdominal wall, if it does not already exist.

HORATIO SOUTHGATE SMITH—died April 27th, 1876, was born at Portland, Maine, July 28th, 1820. He entered the literary department of Bowdoin College in 1836, but in 1838 went to Dartmouth College, New Hampshire, from which he graduated in 1840. In the same year he entered the Medical Department of Bowdoin College, and received his degree in 1843.

His first appointment was as Resident Physician at the South Boston Hospital, Mass. After one year's service in this position, he was appointed Assistant Physician to the Maine Insane Hospital at Augusta, of which the well-known Doctor Ray was superintendent. In 1845, by the advice of Dr. Ray, he went to Eastport, Maine, where he practiced for two years. In June, 1847, he came to Brooklyn, where he spent the remainder of his life in active practice.

He soon became interested in dispensary practice and did some noble work among the poor of South Brooklyn, especially during the cholera season of 1849. In 1854 he was appointed one of the Attending Physicians to the Brooklyn City Hospital, and this position he held uninterruptedly until his death. In former years he was a regular attendant of the meetings of this Society, and although his written contributions to its transactions were few in number, his interest in its welfare was always deep and earnest.

In 1849 Dr. Smith married Susan Dwight, daughter of Edmund Munroe, of Boston, and has left five children, whose moral and mental endowments have been a constant source of pride and comfort to their parents.

During his twenty-nine years of practice in this city, Dr. Smith gained the confidence and affection of his patients by a devotion to duty as unremitting as it was intelligent, and earned the respect of his colleagues by a professional zeal as effective as it was earnest. His sound judgment and extended knowledge made his opinions reliable; his quickness of perception, thoroughness of investigation, readiness of decision, made his practice successful; his self-forgetting love of duty, honor, truth, made his life beautiful. He was strong, morally and mentally. His rare conscientiousness made him not only intolerant of shams, but impatient of even verbal exaggeration. All his instincts were pure and noble. His fine sense of honor, of personal responsibility in all the relations of life, made him a high-minded citizen and patriot. His convictions, unwarped by sentiment, and founded always on pure reasoning, were sharply defined and unwavering; and yet his keen sense of justice kept him as far from prejudice as is possible for a strong nature to be held.

Conspicuous among his mental endowments were a power of abstract reasoning, and a clear discrimination between the real and the apparent which was ever active and accurate. This clearness of thought and power of analysis, together with his carefully cultivated habit of close investigation, made him a true and honest critic of opinions and of practice. One of his colleagues said recently that in medical discussions Dr. Smith generally assumed the attitude of an objector, but that his objections were based on a groundwork of solid reasoning, and hence were rarely offensive and always just.

In addition to his other gifts, Dr. Smith possessed a faculty of condensed expression, and a delicate appreciation of the meaning of words which gave his writings a clear compactness rare and remarkable; while his wide culture, combined with a wit fine

as it was brilliant, made his conversation worthy to be remembered. He loved the best society and did honor to it by his personal presence, his courtesy, his strong sense, his cultured wit. To paraphrase one of the classic authors with whom he was familiar, he could be admired the more, the more he was studied, and loved the better, the better he was known. His affections centered in his home, where he had the good fortune to find all that his heart could wish of earthly satisfaction. He loved and honored his profession, and studied the recent records of scientific progress as carefully as he treasured the results of past experience. He lived an unostentatious, self-sacrificing life—a true physician's life—grand in its usefulness, noble in its example—a worthy preparation for the life to come.

He bore the prolonged sufferings induced by the malignant disease of which he died with a fortitude which only his strong will made possible ; and he viewed the certainty of his approaching end with a calmness which was greater than stoical, because it was Christian. His useful, honorable life was crowned and sanctified by the faith which triumphs over death.

W. H. MARTIN,
C. R. MCCLELLAN, } *Committee.*

THE regular monthly meetings of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

THE July meeting will be held on the 17th, at which time there will be presented the following papers:

Filth in Cities and Towns, by Dr. B. A. Segur.

Report of Pathological Section, including Dr. Schenck's Six Operations of Median Lithotomy.

Report of Delegates to American Medical Association, through Dr. Prout.

Report of Delegates to State Society, through Dr. Skene.

Report of Delegates to Queens Co. Medical Society, through Dr. Rushmore.

——AT THE LATE MEETING OF THE STATE SOCIETY, DR. E. R. SQUIBB was elected President for 1876–7.

——DR. J. H. H. BURGE has been elected a permanent member of the State Society from Kings Co.

EDITORIAL NOTES.

——The Paper read by Dr. Chapman at the June meeting has been withdrawn from publication for the present, as one of the cases reported is still making history. In a few months its fate will be decided, and the paper can be published with a completeness it could not now have.

——Nosology.—The practice of naming diseases after the physician who first describes them, as in the case of *Morbus Brightii*, is in danger of being overdone. The disease called Addison's and the symptoms known as Daltonism are well understood, and possibly also the neuroses of Duchenne and Ménière, but to very few do the terms *Morbus Basedowii* and Hodgkins' disease convey as much meaning as would some simpler terms which in a measure indicate the chief pathological condition.

——The Metrical System is gaining ground on the Continent. The Austrian government has enacted regulations causing druggists to discontinue the use of the former weights of the apothecaries' table, and to dispense according to the decimal system . . . . A note of caution has been given us in connection with the article on the "Modern Spoon" in the May number, namely: the graduates sold in drug stores for family use should be tested by an accurate standard, for the reason that some of them are carelessly and inexactly graded. *Nothing* should be trusted without examination where potent remedies are to be administered.

——The Ocean Breezes of Coney Island are to be made available to the little sick folk of New York during the heated term. A benevolent association has established there a "Sanitarium," at which sick children are to be lodged, fed and cared for, including medical attention; also another at Dobb's Ferry.

——Dr. John F. Morse, who 30 years ago was a member of this Society, died Dec. 30, 1874, in San Francisco. An eloquent memoir of his useful and successful career in California appears in the *Medical Transactions* of that State for 1875 (just received). It says, "the loss of Dr. Morse is a public calamity."

——Dr. D. C. Peters, late surgeon in the United States army, died in this city April 22, in the 47th year of his age.

——Pettenkofer was lately offered a prominent public position in Berlin, but declined to accept. The King of Bavaria thereupon wrote him a most complimentary letter, conferring upon him the rank of State Counselor.

——The French Senate.—Prof. Robin and six other medical men have been elected Senators; there are 39 physicians in the Chamber of Deputies.

——On Milk.—Little Johnny Good had paid his first visit to a country farm, and while there he was treated to a drink of fresh, creamy milk; and he saw the cow, one of the olden kine. On his return to the city he generalized as follows: "Mamma, I wish our milkman would keep a cow."

——A Solution of Salicylic Acid in water, one part to eight, may be made by using acetate of lime and glycerine, one equivalent of each. The borate of sodium and the sulphite of sodium have been recommended to aid the solution of salicylic acid. In Germany the pure pulverized acid is sometimes given in a wafer containing seven to fifteen grains.

——Announcements.—By Dr. Seiler, of Philadelphia, a series of micro-photographs, in monthly parts; four plates or more to each number; six dollars a year.——By Prof. Pooley, a New Medical Monthly, at Columbus, Ohio.——A *fourth* edition of Dr. Da Costa's Medical Diagnosis, 835 pages.——Appleton has in press Sayre's Lectures on Orthopedic Surgery, and Gurdon Buck's Reparative Surgery. ——Dr. Chadwick, of Boston, has translated the Pathology and Treatment of Childbed, by Prof. Winckel, of Rostock.

——Dr. J. C. Shaw has a paper on Intra-cranial and Intra-ocular Circulation in the last *Journal of Nervous and Mental Disease* (Chicago).

——On the Effect of Ergot on the mammary secretion, Dr. Schtsherbinkenhoff observes that during an "epidemic" of poisoning by ergot the flow of milk in nursing women ceased on the appearance of ergotism. He has since used the drug with success, to favor the speedy cessation of milk-flow at the time of weaning.—*Edin. Med. Journal.*

——Dispensaries.—At the dispensary connected with the L. I. College Hospital, during April last, there were 797 patients treated, 43 more than in corresponding month of last year. Of these 321 were medical cases, 221 surgical, 48 diseases of females, 177 of children, 30 of throat, eye and ear. . . . . If the data necessary to compile a *monthly* exhibit of the medical work of the dispensaries and similar charities in this county are regularly sent to the Secretary, their publication will be germane to the objects of these "Proceedings."

——Deaf Mutes.—An institution for the education and care of this class of defectives was opened in May, 1875, at 177 Main Street, under the direction of the Order of the Daughters of Mary. The course of instruction extends over a period of seven years, and includes lip-reading and articulation as well as the sign language.

——At the American Medical Association, the Kings Co. Society was represented by Drs. Baker, Bell, Bodkin, Burge, Byrne, Clark, Hutchison, Reese, Schenck, Segur, Sherwell, Skene, Squibb, Wyckoff, Young and Zabriskie; and at the State Society Drs. Ball, Bell, Burge, Giberson, Hutchins, Hutchison, Lowell, Matthewson, Prout, Segur, Skene, Squibb and Wyckoff.

——The East Brooklyn Dispensary Association has just been organized. It is proposed to open a Dispensary near the junction of Broadway and DeKalb Avenue.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, JULY 18, 1876.

FILTH IN CITIES AND VILLAGES.

By B. A. SEGUR, M.D.

I have before me four Reports of Dr. Stuart, the Registrar of Records and Vital Statistics of the city of Brooklyn.

The reports are for the weeks ending respectively, June 17th and 24th, July 1st and 8th, the latest published by the Board of Health. From the report of June 17th I read :

"There were 144 deaths during the week—56 less than the previous week, and 68.6 less than the average during the quarter ending June 10th inst. The annual death-rate per 1,000 living was 14.79—a lower death-rate than during any week since the records have been kept. The total deaths were less than during any week since the one ending June 20th, 1874. By classes the deaths and the death-rate of each class were as follows : zymotic, 38—death-rate, 3.91 ; constitutional, 30—death-rate, 3.08 ; local, 56—death-rate, 5.75 ; developmental, 13—death-rate, 1.33 ; violence, 7—death-rate, 0.72.

"The deaths from zymotic causes were less than during any week since the one ending May 30th, 1874, since which date the population has been increased by 43,000. The deaths from diarrhœal diseases come markedly into prominence.

"There were 75 deaths of children under 5 years of age, being 52.13 per centum of the total."

From the report of June 24th—

"There were 189 deaths during the week ending June 24th—45 more than the previous week, and 18.4 less than the average during the quarter ending June 17th. The annual death-rate per 1,000 living was 19.42." "The increase in the total was chiefly in the zymotic causes." "The deaths from diarrhœal diseases were just double the week before—an increase *pari passu* with the rise of mean temperature." "The mean of the thermometer was 76.17°—a little more than six degrees higher than the

mean of the previous week." "Fifty-four per cent. of the deaths were of children under 5 years of age."

From the report of July 1st—

"There were 268 deaths during the week—79 more than the previous week, and 46 more than the average during the quarter ending June 24th. The annual death-rate per 1,000 living was 27.54. The effect of a period of high temperature on life and health is shown in the marked increase of deaths last week over those of previous weeks. And this, too, when the actual population has been diminished by several thousand by the usual emigration to the country. A reference to the tables shows that there were 68 deaths from diarrhœal diseases, and 66 of these were of children under 5 years of age. The previous week there were 26 deaths from these diseases, at all ages, and the week before that 13. The other zymotic diseases show little or no change dependent on seasons. The table on the third page shows the localities of the greatest numbers. They are in those wards where there is the largest tenement house population—large numbers crowded in small, illy-ventilated apartments, where ignorance and carelessness are allied with filth, improper food and foul air, in causing the death of so many children.

"Fifty-five of the 68 deaths from diarrhœal diseases, or over 80 per centum, were in tenement houses. The wards especially noticed were the 6th, 10th, 16th, 17th and 21st.

"There were 157 deaths of children under 5 years, nearly 60 per centum of the total deaths."

From the report of July 8th—

"During last week there were 381 deaths—114 more than the week before, and 138.5 more than the average during the quarter ending July 1st. The annual death-rate per 1,000 was 39.15."

"From zymotic causes there were 201 deaths, at a death-rate of 20.66 per 1,000. But those from diarrhœal diseases alone attract attention. From other causes there were no more deaths than the average."

"Of the 173 deaths from diarrhœal diseases, 134 were returned as from cholera infantum; 161 were under 5 years, and 115 of these under 1 year of age."

"The distribution of these by wards are given in the table on the third page. 65 were in tenement houses (as the law defines tenement houses), but probably many more ought to be included. Of those in the 6th, 10th, 12th, 16th and 21st wards, there were in these wards respectively, 7, 3, 7, 6 and 9 deaths in tenement houses."

"The mean of the thermometer was one degree higher than the previous week, reaching 81.76 degrees."

From these reports I have constructed the following table:

Week ending.	Deaths from all Causes.	Death-rate 1,000 living.	Deaths from Zymotic diseases.	Zymotic Death-rate.	In 100 deaths, all causes, died of Zymotic diseases.	In 100 deaths, all causes, died of child'n under 5.	Annual death-rate to 1,000 living under 5.	Deaths from Zymotic diseases, child'n under 5.	In 100 deaths, Zymotic diseases, died of children under 5.	Mean temperature.
June 17	144	14.79	38	3.91	26+	52	26	31	81	70°
" 24	189	19.42	68	6.99	35+	54	47	55	82	76.17°
July 1	268	27.54	103	10.59	38+	58	78	90	87	80.66°
" 8	381	31.15	201	20.66	52+	70	158	183	91	81.76°

In the last of this series of four weeks, the zymotic deaths were 4.28 times as many as in the first. In the first, about one death in four was due to zymotic diseases; in the fourth week, more than one in two.

Of the deaths from all causes, a little more than one-half, in the first

week, were of children under five years; in the fourth week, nearly three-fourths. We may say that there are in Brooklyn, in round numbers, 60,000 children under five years of age. In the first week the zymotic deaths were 38, 31 of which were of children under five—an annual death-rate of 26 in 1,000 living of that age, and .8 in 1,000 living over that age. In the last week there were 201 deaths from zymotic diseases, 183 of which were of the children—an annual death-rate of 158 for the children and 2 for older population. In other words, while, in a favorable week, infants and young children (under 5), in proportion to their numbers, suffered an eightfold mortality in the changed conditions of the first week in July, their loss by zymotic deaths was twenty-nine times greater.

Children under 5 years of age constitute not far from one-eighth part of our total population. Their annual share of the total mortality is about one-half, but of the zymotic deaths their share is three-fourths. Three deaths from zymotic causes are among the population under five, to one death of the population over five. One-half of the entire mortality due to zymotic diseases each year occur in the hot months—a concentration of morbid influences and a rate of mortality in our heated terms, every year, assuming the proportions of a plague.

The diseases included under the term of diarrhœal contributed a very large proportion of the increase of deaths in these weeks. Thus:

Week ending.	Zymotic Deaths.	Diarrhœal Deaths.	In 100 Zymotic deaths died of Diarrhœal diseases.
June 17	38	13	34
" 24	68	26	38
July 1	103	68	66
" 8	201	173	86

Showing that in the first week the diarrhœal were one-third of the zymotic deaths, and in the fourth week nearly seven-eighths.

One hundred and thirty-four deaths were from Cholera Infantum, the yearly recurring pestilence, which we knew was sure to come with the hot weather, and which we know will continue through the remaining weeks of July, through all the weeks of August, and will suddenly decline early in September. We know that the aggregate mortality from Cholera Infantum will be very great, and if the excessive heat of the last three weeks continues, we may expect a mortality from this disease in 1876 in excess of 1872, when the temperature was very high, and the deaths from Cholera Infantum were 1,260, decreasing in 1873 to 1,112, and in 1874 to 968.

Of the 1,260 deaths in 1872, 1,259 were of children under five; all the deaths in 1873 and 1874 were of children under five.

In 1866 Asiatic Cholera was epidemic in Brooklyn. In the quarter ending September 30th, there were 517 deaths from Cholera Asiatica, and 717 from Cholera Infantum.

The wards in which the one was most fatal, were the wards in which the other was also.

The two wards noted in Dr. Stuart's last Report as having the largest number of deaths from Cholera Infantum, in this early period of its prevalence—its invasion stage—are the same two wards in which by far the greatest mortality of Cholera Asiatica occurred in 1866.

The Report of the Metropolitan Board of Health, 1866, page 177, says:

"About four-fifths of the cholera cases occurring from May 1st to July 21st, were found in dwellings situated within the diarrhœal fields." This was the beginning of the epidemic.

"And we find that Cholera did not become persistent or frequently recurrent week after week in any locality of the city proper that was not fully included in one of the 'diarrhœal' fields."

If the children in Brooklyn, who, in the progress of the weeks of the hot season yet before us, are appointed to die with Cholera Infantum, could now be removed to homes in the country, we should confidently expect that nearly all would survive the season. We understand cleanliness and pure air to be preventive, and Cholera Infantum to be one of the preventable diseases—preventable by public hygiene, by sanitary measures sufficiently comprehensive to affect the health of communities for preservation, as the conditions actually operating affect it destructively.

Professor Parkes (Manual Practical Hygiene, page 457), treating of the prevention of Dysentery and Diarrhœa, states their chief causes to be, impurity of air and water due to the "effluvia of putrefying animal substances," "gases and vapors from sewers," "foul latrines," "organic effluvia from dysenteric stools," "use of unclean closets," "diarrhœal evacuations." To yellow fever, cholera and typhoid fever he assigns similar causative conditions. He says:

"Yellow fever is a disease of cities and parts of cities, being often singularly localized like cholera," in "evident connection with fecal and other animal matters." "The localizing causes are connected with accumulations of excreta round dwellings and over-crowding." "Of the former there are abundant instances, and it is now coming out more and more clearly that, to use a convenient phrase, yellow fever, like cholera and typhoid fever, is a fecal disease."

Of typhoid fever he says:

"A single case of typhoid fever should at once be held to prove that something is wrong with the mode of getting rid of the excretions."

It is easy to admit that perfect purity and cleanliness of the air are objects to be attained to insure healthy habitations. One of the means necessary to be employed Dr. Parkes says is:

"A system of immediate and perfect sewer removal, which shall render it impossible that the air shall be contaminated by excreta."

When, by pure air and pure water, by a ventilation which shall carry off all respiratory impurities, a healthy house has been provided for—then:

"The architect must engraft on it the other conditions of comfort, convenience and beauty."

The latest statement of the established doctrines relating to diseases and filth, and their connection, is by a very high sanitary and official authority, John Simon, late Medical Officer of the Privy Council, England.

He has happily embodied in the phrase "Filth Diseases" both of the ideas, causation and prevention. He shows in detail the sources and forms of filth, and the origin and propagation of diseases therefrom.

His official report on "Filth Diseases and their Prevention" has been republished in this country at the instance of the Massachusetts State Board of Health. It is a small book, and may be read in a few minutes. Every physician should get it and read it, and then give it to his patients to read.

I quote a few selected portions, which are forcible and concise, conveying the important truths in this matter, and cannot be more condensed.

The author defines and contrasts Public Hygiene and Private Hygiene:

"The causes of disease to which I here refer as removable, are exclusively such as contravene Public Hygiene; such, namely, as affect more or less in common the mode of life of masses of population."

"Doubtless much disease is also produced, and much life consequently wasted, through causes which are within the province of Private Hygiene; causes which either are not of massive operation, or may at least be easily escaped at individual option, and which the law does not, and generally could not, take within its scope; but to such causes I do not advert as removable in the sense of my present argument."

The causes in general operation in England which injuriously affect the Public Health are summed up in the following statement:

"Foremost two gigantic evils stand conspicuous:

"First, the omission (whether through neglect or through want of skill) to make due removal of refuse-matters, solid and liquid, from inhabited places; and, secondly, the license which is permitted to cases of dangerous infectious disease to scatter abroad the seeds of their infection.

"In certain very important cases injury—immense injury—accruing to the public health arises from a co-operation of these two evils; arises, namely, through the special facility which (as I shall presently illustrate) certain forms of local uncleanliness provide for the spread of certain specific infections; and the influence which uncleanliness almost necessarily exerts in that way against the public health makes so large an addition to the influence which it exerts in other ways, that, in total power, uncleanliness must, I think, without doubt, be reckoned as the deadliest of our present removable causes of disease."

Disease-germs and special morbid ferments develop in filth; these, and not the sensible offensive character, produce zymotic disease. This proposition is so clearly stated, and is so important, that I venture to read the paragraph containing it at length:

"An important suggestion of modern science with regard to the operations by which filth, attacking the human body, is able to disorder or destroy it is: that the chief morbific agencies in filth are other than those chemically-identified, stinking, gaseous products of organic decomposition which force themselves on popular attention. Exposure to the sufficiently concentrated fumes of organic decomposition (as, for instance, in an unventilated old cesspool or long-blocked sewer) may, no doubt, prove immediately fatal by reason of some large quantity of sulphide of ammonium, or other like poisonous and fetid gas, which the sufferer suddenly inhales; and for smaller doses of these fetid gases, as breathed with extreme dilution in ordinary stinking atmospheres, both give immediate headache and general discomfort to sensitive persons temporarily exposed to them, and also appear to keep in a somewhat vaguely depressed state of health many who habitually breathe them, but here, so far as we yet know, is the end of the potency of those stinking gases. While, however, thus far there is only the familiar case of the so-called *common chemical poison*, which hurts by instant action and in direct proportion to its palpable and ponderable dose, the other and far wider possibilities of mischief which we recognize in filth are such as apparently must be attributed to *morbific ferments*, or *contagia*; matters which not only are not gaseous, but on the contrary, so far as we know them, seem to have their essence, or an inseparable part of it, in certain solid elements which the microscope discovers in them; in living organisms, namely, which in their largest sizes are but very minute microscopical objects, and at their least sizes are probably unseen even with the microscope; organisms which, in virtue of their vitality, are indefinitely self-multiplying within their respective spheres of operation, and which, therefore, as in contrast with common poisons, can develop indefinitely large ulterior effects from first doses which are indefinitely small. Of ferments thus characterized, the apparently essential factors of specific chemical processes, at least one sort—the ordinary septic ferment—seems always to be present where putrefactive changes are in progress, as, of course, in all decaying animal refuse, while others, though certainly not essential to all such putridity, are in different degrees apt, and some of them little less than certain to be frequent incidents of our ordinary refuse. As, apparently, it is by these various agencies (essential and incidental) that filth produces "zymotic" disease, it is important not to confound them with the fetid gases of organic decomposition; and the question, what infecting powers are prevalent in given atmospheres, should never be regarded as a mere question of stink. It is of the utmost practical importance to recognize in regard of filth, that agents which destroy its stink may yet leave its main powers of disease-production undiminished. Whether the ferments of disease, if they could be isolated in sufficient quantity, would prove themselves in any degree odorous, is a point on which no guess needs be hazarded, but it is certain that in doses in which they can fatally infect the human body they are infinitely out of reach of even the most cultivated sense of smell, and that this sense (though its positive warnings are of indispensable sanitary service) is not able, except by indirect and quite insufficient perceptions, to warn us against risks of morbid infection."

In addition to the mortality due to Filth Diseases, *filth multiplies the mortality of all diseases and especially the diseases of children.*

"In filthy urban districts, where the foul air, comparatively incarcerated in courts and alleys and narrow streets, can act with most force in regard to masses of population, the population always shows an increased mortality under several titles of disease. Such miscellaneous increase of mortality affects, probably, all ages more or less, but a distinctively large proportion of it attaches to the children. Apparently the mere influence of the filth (apart from other influences) in such a district will be causing the infants and young children to die at twice or thrice or four times their fair standard rate of mortality; and this disproportion, which becomes even more striking when the

chief epidemics of ordinary childhood (measles and whooping-cough and scarlatina) are left out of the comparison, seems to mark the young lives as finer tests of foul air than are the elder, and, perhaps, acclimatized population."

Particular Diseases Caused by Filth: Diarrhœa a Common Symptom of the Filth Diseases.

"The mucous membrane of the intestinal canal seems peculiarly to bear the stress of all accidental putridities which enter the blood. Whether they have been breathed, or drunk, or eaten, or sucked up into the blood-vessels from the surface of foul sores, or directly injected into the blood-vessels by the physiological experimenter, there peculiarly the effect may be looked for; just as wine, however administered, would 'get into the head,' so the septic ferment, whencesoever it may have entered the blood, is apt to find its way thence to the bowels, and there, as universal result, to produce diarrhœa.

"In all filthy districts one particular class of diseases seems specially apt to stand in relief: the diseases, viz., which, in respect of their leading symptom, may be generalized as diarrhœal.

"Referring first to the disease which of late years has, for sufficiently sad reasons, become well known to the public of this country under the name of Enteric or Typhoid Fever." * * * "The experience is not only that privies and privy-drainage with their respective stinkings and soakings, and the pollutions of air and water which are thus produced, have in innumerable instances been the apparent causes of outbreaks of enteric fever, but, further, that they have seemed capable of doing this mischief in a doubly distinctive way." "I would say that it is difficult to conceive, in regard to any causation of disease in a civilized community, any physical picture than that which is here suggested." * * * "Molecules of excrement which man's filthiness lets mingle in his air and food and drink." "The local affinities of Asiatic cholera, when present in this country, have always been so close to those of enteric fever . . . . that no reasonable doubt can, I think, be entertained as to the substantial dependence of cholera epidemics in this country on the opportunities which are ever widely open for the above described filthy method of infection.

"The argument which applies to the bowel-discharges of cholera and enteric fever, and which, in regard to them, rests on a very large quantity of detailed evidence, seems to extend by extremely strong analogy to every disease, whether nominally 'common' or 'specific,' in which the human intestinal canal is the seat of infected changes; chiefly, perhaps, to such diarrhœal and dysenteric infections as are exclusively or distinctively intestinal, but likewise, I apprehend, more or less, to every general infection (such, for instance, as scarlatina) in proportion as it inclusively infects the bowels; and it would thus seem probable that air and water having in them the taint of human excrement must often carry with them, whithersoever they pass, the seeds of current morbid infections."

I have made the foregoing free extracts from Mr. Simon's Report because of the importance of these condensed statements (his large knowledge and long experience of this subject enable him to freight his words with matter), and because I know that the clear light they give on the common conditions of prevalent diseases will interest the members of the Society in the book as a contribution to a difficult branch of medical science, namely, etiology.

These generalizations are realized and illustrated by examples occurring in the practice of every physician.

In England, where public attention has been directed for several years to this subject, every issue of the medical journals contains records of carefully investigated instances of typhoid fever, diphtheria, puerperal fever, or other allied diseases due to sewer poison, impure water, etc.

I will not take time to give any histories, but will quote the testimony

of the Secretary of the Massachusetts State Board of Health; in his article on "The Disposal of Sewage," 7th Report, page 281, he says:

"In England the reports of the medical inspectors to the medical officer of the privy council have contained such searching investigations of the causes of disease and their connection with filth, as to give to at least one branch of medicine the title of an exact science."

The sources and localities of filth in cities and villages are numerous and well known. It does not seem too much to say that very little if any consideration is given to the matter in point of view of the agency of filth in producing disease. Very little restriction is placed upon any of the offensive trades, very little objection is made to contiguous cesspools and privy vaults; drains and sewers end and discharge in the very midst of a numerous population, and houses with all the modern improvements are absolutely the sole ventilating conduits for the sewer gases.

It is equally true of pleasant country villages and the great city, that there is no removal of sewerage. The still air of early morning in the village street, bordered with white painted houses and well-ordered greenery, is sensibly contaminated with the effluvia of the privy in the depth of the lot, and in certain states of the atmosphere each city tenement house opens its windows and doors upon the sickening effluvia of the privy-vault, filth invisible, vaporous, gaseous, as truly enveloping the house and its breathing inmates as the vapor which becomes visible as fog.

But it is in populous towns and in certain localities in towns that the filth accumulations are of such magnitude as to produce its most injurious effects. The quarters where streets are not cleaned; where the house slops are putrefying in the gutters; where swine and goats and stables of horses and cows abound; where the vaults and cesspools are reeking, often overflowing, and where the closely built up space is not ventilated by the winds; these quarters of the city are the "diarrhœal fields," such streets are "death's thoroughfares."

I wish particularly to speak of the privy vaults of Brooklyn. Not that they are worse than in any village in the county of Kings or in the country at large, but Brooklyn has 40,000 such vaults, in which excreta are accumulated, decomposition is going on, morbid germs are multiplying, zymotic ferments are at work, diarrhœal and dysenteric and fever stools are ripened to infective stages, and the mechanical construction and all the appliances of every one of these vaults is such as to insure the utmost possible access of this liquid and gaseous *materies morbi* to the soil and to the atmosphere. With the rise and fall of the

water in the soil, the ground water, is the varying solid, semi-solid, or liquid state of the contents of these vaults, and the circulation between the soil and the vault goes on until the prolonged dry season has dried the soil and the vault, and then the filth-soaked soil exhales dysentery and typhoid fever into the atmosphere.

All the privy vaults in Brooklyn, whether connected with the sewer or not, are vaults in which excreta is accumulated. At longer or shorter intervals the night scavenger removes the contents of these receptacles.

In the busy season a hundred loads, each night, are taken out of vaults in buckets, which are carried to the streets, poured into the carts, and pass through miles of the populous city all through the hours of the night to the offal dock.

This is the disposition of the remainder left from ground soakage and air pollution.

It is easy to estimate the quantity of excreta thus stored up in Brooklyn and now, in this hot weather, undergoing decomposition. In the table of anatomical and physiological constants given in Huxley's "Lessons in Physiology," page 297, *et seq.*, the daily renal and intestinal excretion of a man is stated to be: feces, 2,800 grains; urine, 24,000 grains—total, 26,800 grains, or about 62 ounces. Each full grown man (weighing 154 lbs.) in effect deposits his own dead, effete and putrescible corpus in the vault of the privy once every forty days ! ! !

In a mixed population of all ages 1,000 persons are estimated by Parkes to pass, in one year, 25 tons of feces and 91,250 gallons of urine.

The chemical changes which take place in these excrement matters within the vaults, are described by Prof. Parkes in his Manual of Practical Hygiene, page 337, in the section treating of the "decomposition of sewage matter." He says fresh, healthy feces, if unmixed with urine, decomposes slowly—urine unmixed with fecal matter decomposes in from three to ten days. When urine and feces are mixed decomposition is much more rapid. The solid and liquid excreta each act as a ferment in the presence of the other, and the absorption of oxygen is greatly increased.

"When the solid excreta (unmixed with urine) begins to decompose they give out very fetid substances, which are, no doubt, organic." "When (instead of being dry) urine is present, ammonia and fetid organic matters are disengaged in large quantities."

Water also aids the decomposition of solid excreta.

These are the processes always going on and now with increased intensity because of the high temperature.

Mr. Simon says, Filth Diseases, page 18:

"When an epidemic of enteric fever or of cholera or of diarrhœa has been traced (as in general it quite easily can be) to some gross excremental pollution of air or water, the primary source of such pollution will usually be under one or more of the following three heads, viz., faults of public sewerage, faults of indoor water-closets and other apparatus of house drainages, and the fault of bog-privies."

Again (page 22):

"Of all the filth influences which prevail against human life in this country, privies of the accumulative sort operate, undoubtedly, to far the largest extent."

And (page 23):

"All this accumulation, with its attendant exhalation and soakage, and at intervals the shoveling and carting away of its masses of fetid refuse, and the exposure of the filth-sodden catchment-surfaces of privy-pits and middens, has been, as needs hardly be said, an extreme nuisance to those in whose vicinity it has been; and sometimes with the aggravating condition that, because of the situation of the privy, each filth removal must be through the inhabited house. What nuisance this system at present constitutes in innumerable populous places, including some of our largest towns, can indeed hardly be conceived by persons who do not know it in operation; and the infective pollutions of air and water-supply, which it occasions to an immense extent in towns and villages throughout the country, are chief means of spreading in such places some of the most fatal of filth diseases."

I wish distinctly to propose, as an immediate means for the improvement of the public health of Brooklyn, the condemnation of accumulation privy-vaults by the voice of the profession, and their removal and prohibition by the health authority.

They are condemned by the present State of Sanitary Science, and should be equally by Sanitary Legislation.

Mr. Simon says, cleanliness enforced by Sanitary administration would in a few years reduce the annual mortality of England by tens of thousands.

And further, that immediate and continuous removal of excreta from towns is as necessary as the allied physiological process of excretion in the human body.

Adequate and practicable processes are in successful operation in England. If we find them too costly, I have no doubt that our inventive skill, turned to methods of sanitation, will devise better and more economical ways of doing work which we are convinced ought to be done, and which we are resolved to do. In the Seventh Annual Report of the State Board of Health of Massachusetts is a statement of examinations of Rivers Pollution, made by James P. Kirkwood, C. E., of Brooklyn.

On page 152 he says:

"It is desirable always that the sewage generated in a city should leave the city on the same day, within twelve hours at most."

This standard with reference to the removal of excrement matters is set up by a civil engineer, not by a professed sanitarian. The former is accustomed to advise municipalities with reference to works of improve-

ment which are practicable in point of view of cost; the latter is always looking towards an ideal city.

But the immediate removal of filth is a doctrine common to the sciences of the civil engineer and the sanitarian.

The statistics which I have read from the reports of Dr. Stuart show the high death-rate of children under five years, at the present time.

"The death-rates of young children are among the most important studies in sanitary science. In the first place their tender young lives, as compared with the more hardened and acclimatized lives of the adult population, furnish a very sensitive test of sanitary circumstances; so that differences of infantine death-rate are, under certain qualifications, the best proof of differences of household condition in any number of compared districts. And secondly, those places where infants are most apt to die are necessarily the places where survivors are most apt to be sickly; and where, if they struggle through a scrofulous childhood to realize an abortive puberty, they beget a still sicklier brood than themselves, are less capable of labor, and even less susceptible of education. It cannot be too distinctly recognized that a high local mortality of children must always necessarily denote a high local prevalence of those causes which determine a degeneration of the race."

It cannot be maintained that the children are suffering this excess of mortality from the disturbances of dentition.

"The mortality tables everywhere show that the death-rate among children steadily and perceptibly diminishes from and after the fourth or fifth month of child-life; that is, after the time at which the teeth generally begin to appear; for example, 7,499 children died in New York during the year 1867 whose ages where less than one year; of this number 891 died during the first week; 884 between the first and fourth week; 945 between the fourth and eighth week; 885 during the third month; 1,613 between the third and sixth month; and 2,281 during the remaining six months of the year." (Public Health, Vol. 1, page 48.)

The following instances relate the excess of sickness of children directly to their greater susceptibility to filth-poisons.

"Carpenter states that a large number of children in one of the English workhouses were twice attacked with severe diarrhœa from exposure to the emanations from a manure factory, while the workmen had good health. Murchison states that in a school at Clapham twenty out of twenty-two boys were seized with violent vomiting, purging, prostration and fever, within three hours after exposure to foul sewage emanations rising from a sewer which they had been watching the workmen to clean. None of the men became ill. It is undoubtedly the same with regard to sewage emanations in and near our dwellings. The strong, the active, the well, and those who spend a large part of the day away from their homes, do not ordinarily suffer.

"In the great epidemic of typhoid fever at Croyden in 1853, caused by sewer-gases in the houses, we found servants chiefly attacked, and then children; the fathers were very seldom sick at all, because they were not much at home, while the others were usually at home."—(*Report Mass. State Board of Health*, pp. 281-2).

I do not inquire the exact proportion of disease in general, or of zymotic disease due to filth; the diarrhœal diseases are a class easily diagnosticated, and no considerable numerical mistakes can occur with reference to them; it is established that they are filth diseases, fecal diseases. Their prevention consists in the removal of their causes.

I believe that this Society can effect a reform in the excreta-removal of Brooklyn, and I am certain that this reform accomplished, we should see the annual death-rate reduced, and a corresponding number of lives saved.

——NOTE.—Since the meeting of the Society the "Weekly Statement of Deaths" for week ending July 15th, 1876, has been published. I take from its "remarks" the following extracts :

There were 533 deaths during the week—152 more than the previous week, and 276.5 more than the average during the quarter ending July 8th. The annual death-rate, per 1,000, was 54.77. By classes the deaths and the death-rate of each class were as follows :

	Zymotic.	Constitutional.	Local.	Developmental.	Violence.
Deaths	309	62	128	26	8
Death-rate . .	31.75	6.37	13.15	2.67	.82

Excepting the Diarrhœal diseases, which include dysentery, diarrhœa, cholera morbus, cholera infantum, and entero-colitis, there were less deaths than usual from Zymotic causes. The deaths from Diarrhœal diseases were more than the average from all causes during the quarter that closed the week before. These diseases caused 271 deaths, against 173 the previous week ; 259 of them were of children under 5 years, and 184 of these were under 1 year of age ; 143 died in houses occupied by three or more families.

By wards they were	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Deaths	4	2	8	0	7	12	3	2	3	11	7	5	2	9	6	29	6	7	3	4	5	2	0	2	4

The mean of the thermometer was a little less than the previous week, as is shown in the table below, but the mean of the highest readings is greater. More than 2 inches of rain fell.

In every 100 deaths, from all causes, 56 were from zymotic diseases. In every 100 deaths from zymotic diseases, 95.5 were of children under 5 years. 13,468 children would die in the year if the diarrhœal diseases were not stayed. That would be a mortality of 224 in every 1,000 living under five—that is, nearly one-quarter would be swept away by the plague.

I wish to call attention to these valuable and instructive weekly statements of deaths. Dr. Stuart informs me that they are published in full every Thursday in the *Eagle.*

REMARKS.

DR. J. H. RAYMOND.—There is, perhaps, nothing more difficult than to demonstrate the relation of cause and effect between local nuisances and local mortality. This difficulty has been a thousand fold increased by attempts to attribute to one poison the power to produce cholera infantum, to another the power to produce scarlatina, and so on through the whole list of zymotic diseases. That this classification may in time be made, and that the future may reveal to us differences in the germs as marked as those which the zymotic affections caused by them now present is a consummation devoutly to be wished, but that we are able so to recognize these differences at the present day is unfortunately not the case. Simon has, in view of this ignorance, done the Sanitary world great service in considering this zymotic class as a class of filth

diseases, and Parkes has directed our attention still more pointedly to this great subject, by speaking of them as "fecal diseases." If this title be a proper one, what matters it for Sanitary purposes whether we make an accurate diagnosis between a diarrhœa or cholera infantum, between measles or scarlet fever? It is a zymotic affection, and there must be a local cause; it is a filth disease, and there must be putrescible filth; it is a fecal disease, and there must be animal excreta decomposing and giving off poisonous gases. How many cases of diphtheria have been traced to standing water in cellars, to leaking soil-pipes, to insufficiently trapped water-closets! And though no one can positively identify the germs whose predecessors were the cause of the disease, yet the abatement of the nuisance was followed by improvement in the patient and no new victims attacked. What a grand stride there has been made in practical hygiene, when we are able to assert that small-pox, scarlet fever, measles, diphtheria, cholera infantum and cholera Asiatica are all fecal diseases, and when these diseases, or any one of them, appears, it is a sure indication that there is filth to be removed!

The forty thousand privy vaults in the city of Brooklyn are undoubtedly centres of infection, but what shall be done with them? Connect them with the sewer, is the invariable answer.

It is generally thought that if once filth is led into a sewer, that is the end of it so far as its power to do harm is concerned. Go with me to the foot of Bond Street, where one of the largest sewers in the city discharges its contents. Here are the feces and urine of not far from forty thousand people, a city in itself: as large as Paterson; larger than Dayton, Ohio, and Nashville, Tenn.; the feces annually amounting to two thousand tons, and the urine to one hundred and sixty thousand barrels! Look at the map of the city and see where this mass of filth is discharged. Is it out in the bay, where the tide can carry it far away to the ocean, where air and water may oxidize it and render it innocuous? Is it in a swift-running stream, that hurries it on to the sea so rapidly that the pure spring water has not time to become contaminated? No; it is into a large, open sewer, called the Gowanus Canal, which receives not only what the Bond Street sewer brings it, but also what comes through several smaller ones. In it there is no current; the tide rises and falls, it is true, but so slowly that everything which is poured into it sinks to the bottom, and is constantly added to till the sewer's mouth threatens to be obstructed or navigation is impeded, and then the dredge is set to work. Every low water the sun pours down its rays on this heap of filth, gases are generated, rise to the surface, are carried off by the winds, and our mortality tables show us the results in the deaths from

fecal diseases. Notice, too, that the Gowanus Canal, or, rather, that part of it which receives the contents of this sewer, is not located at Bay Ridge, far away from us, but is in the heart of the city, so that whether the wind blows from north or south, east or west, it carries with it to thousands of the population the exhalations of this pest-hole.

The sewers, then, are not the agents through whose instrumentality we are to be rid of fecal matter. But, it is said, suppose these sewers are carried out to high water mark, will not that remedy matters? If soil-pipes and traps and ventilating shafts were all so constructed that the escape of sewer gas into dwelling and sleeping rooms was impossible, I should say, yes. But sewer-gas cannot always be detected, and its deleterious influences may be constantly at work without our knowledge, until an outburst of diphtheria or some other filth disease tells us that something is wrong, but we are left in the dark, as to what that something is. I sleep with misgivings in a room in our city houses provided with all the modern improvements, and would gladly exchange the convenience of the hot and cold water, for the safety of the old-fashioned pitcher and bowl. And the "yes" I should qualify. For intelligent people water-closets may answer, but the water-closet in the tenement house is always obstructed, either through neglect or maliciousness, many a dead cat, old boot and hoop-skirt having been thrust into the soil-pipe to satisfy the spite of some tenant against landlord or agent. *No water-closet in a tenement house*, may be set down as a sanitary maxim. Privy vaults connected with the sewer are no better than those without sewer connection, for unless water is constantly flowing into them to carry off the excrement, the filth accumulates as in the unconnected vault, and is only stirred up, not carried off, by the rain water which comes from the roof or yard. Our water supply is considered to be insufficient to properly flush sewered privy-vaults, and the regulations of the Board of City Works will not allow waste-water from hydrant and house to run into these vaults, lest the faucets might be left constantly open, and the Ridgewood be exhausted. And should this be allowed, I doubt if it would keep these vaults properly flushed. If, then, unsewered vaults are centres of contagion, and if the sewer only adds to our danger and in nowise mitigates it, whither shall we turn? I feel satisfied that the time will come when the feces and urine of a city will be removed as frequently as its ashes and garbage, and when the inhabitants of this and every other well governed city, town and village, will feel as much aggrieved, and as prompt to complain and press upon officials the neglect of the scavengers who fail to remove daily the excreta, as they now are to complain of the contractor who leaves their streets

unswept and passes by their ash-barrels. May this day be not far distant! and may every member of this Society feel it his duty to contribute to the creation of a public sentiment which shall demand that filth diseases be expunged from our nomenclature of diseases, or if retained to be so only for their historic interest, as showing what may be done to lengthen human life and to alleviate human suffering.

——Dr. E. N. Chapman.—Two years ago, a family attended by him for a long time changed their residence. There had been formerly comparatively little sickness in this family, but not long after going into the new home, which was larger than the old one, a fine double house on Gates Avenue, its members began to suffer from attacks of diphtheria; and as time passed along there were in all nearly thirty cases of that disease. He was, of course, inquired of as to the origin of all this sickness, and gave as his opinion that there was some fault as to the sewer connection. One plumber was called and made some repairs, but the disease did not disappear. The doctor still persisted that the sewering was not right, and another plumber was employed, by whom further changes were made. These changes were so thoroughly and intelligently made that subsequently there occurred no new cases of diphtheria. Experiences of this kind have been so frequent in good houses as well as those of the poorer class, that he suspects "sewer-gas" in connection with the occurrence of every new case of that disease. The servants and children, he finds, are more often attacked than the adult males, probably for the reason that the latter are much less in the house, and less exposed to the effects of the gas. The disease does not always amount to diphtheria; the patient may be seriously indisposed and have a very sore throat, stopping short of the formation of a membrane; generally this condition disappears under quinine and stopping the escape of sewer-gas. On some accounts the water-closet is more to be feared than the yard privy; if the joints of the sewer connection are defective, if the main traps are not properly ventilated, or if the traps on which so much reliance is misplaced, the inmates of the house are obliged to respire more or less sewer-gas during eight or ten hours a day, while the foul air of the other is entered for a comparatively short time. Dr. Chapman further stated the results of considerable study of the best methods of ventilating the sewer-connections of houses; he believes the ventilating tubes should be of two or four inches calibre, should run up to the top of the house in or near a flue that is most of the time heated; the use of the rain-leader as a ventilating pipe is full of danger, for the reason

that there is a tendency in every rain storm to exhaust the traps and thus give inlet to gas from the sewers. As to the use of the earth-closet, the doctor feels certain of only one thing, that their introduction will be slow, and that they require an amount of care and intelligence in their use that they will not get in the lower classes of the city population. In the meanwhile, and until the proper means of disposing of excreta shall have been developed, physicians will be able to do much good by instructing their families as to the poisonous nature of sewer-gas, and the means of preventing its entrance into the living and sleeping-rooms of their homes.

REPORT OF THE PATHOLOGICAL SECTION.

Median Lithotomy.

Dr. P. L. Schenck, the Medical Superintendent of Kings County Hospital at Flatbush, presented to the section five specimens of urinary calculi successfully removed from the male bladder by cutting by the median method. All except the first were too large to be extracted without breaking. No chemical analysis of the calculi had been made, but they seem to be mostly of a phosphatic nature. They were accompanied by the following concise account of each case :

Case I.—I. M. (colored), aet. 20; U. S.; farm laborer; resided in Kings County from his birth. Has had symptoms of stone for six years, which finally became so aggravated as to threaten speedy death. Suffering and emaciation extreme; cystitis most severe. Operation March 10, 1876, weight of stone, 1 oz., 44 grs. Recovery rapid and complete.

Case II.—P. W., aet. 32; France; soldier. Symptoms of stone for six years. Complete incontinence of urine and severe cystitis have existed for one year. Nocturnal incontinence of urine for four years. Operation Oct. 28, 1874. Longest diameter of the stone about 3½ inches, weight, 7 oz., cystitis and imperfect control of urine continued after the operation. (July 18. Subsequently passed a number of small calculi.)

Case III.—M. M., aet. 29; Ireland; sailor. Symptoms have existed for one year. Hemiplegia of left side for two months. Urine bloody and somewhat purulent. Vesical tenesmus intense. Micturition accompanied by spasmodic contraction of the muscles of the paralyzed side. Operation April 9, 1875, weight of stone, 1 oz., 66 grs. On opening the urethra a spiculum of bone was found just anterior to the prostate. Whence it came is a mystery. He made a comparatively good recovery.

(A fragment of bone has been found as nucleus of the stone; the source of these exfoliations is not determined.)

Case IV.—I. D., aet. 12; U. S.; resided in Kings County from his birth. Symptoms have existed for more than one year. Operation Sept. 30, 1875, weight of stone, 1 oz. Urinary fistula for three months, closed finally without surgical interference. Recovery complete.

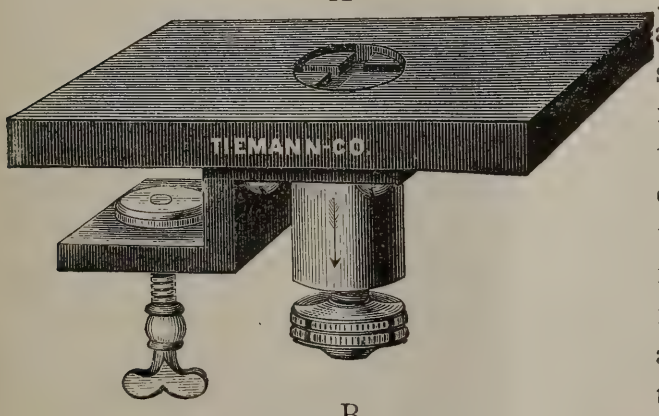
Case V.—H. V. S., aet. 14; Michigan; assistant in glass factory, resided in Brooklyn for ten years. His mother states that the symptoms of stone have existed from his birth, the most marked being nocturnal incontinence of urine. Operation April 20, 1876; weight of calculus, 395 grains; recovery.

Case VI.—A lad, nine years of age, had had symptoms of stone during three years. Operation performed May 11, 1876; weight of stone, 240 grains.

Remarks.—In reply to a question, Dr. J. C. Hutchison stated that in the beginning of his practice he had preferred the bilateral operation as presenting less danger of hemorrhage or wounding the rectum; at present he has no marked preference, and would perform the median, unless the stone was too hard to crush. In that case he would choose the bilateral method. He thinks very well of the median operation, although the time taken in crushing, and the repeated introduction of instruments into the bladder are disadvantages.

A MICROSCOPIC SECTION-CUTTER.

Dr. Charles Jewett presented to the notice of the Society a section-cutter made for him by Tiemann & Co. It is a modification of the well-known apparatus of Dr. Edward Curtis. The brass and glass plates of Dr. C.'s holder are replaced by a single slab of vulcanite, A. By means of the screw, B, a tight-fitting shaft of vulcanite is moved upwards through a cylindrical barrel. The screw is cut fifty threads to the inch, and the circumference of the milled head is graduated for measuring the thickness of sections. The holder may be secured to a table by means



of a clamp. The tissue to be cut, previously hardened, is embedded in the usual manner in a paraffine cylinder cast upon the end of the vulcanite shaft. The paraffine is held firmly to the shaft by two dovetailed slots, cut at right angles to each other in the end of the shaft. The knife may be used either with or without the knife-frame of Dr. C. With the frame large sections of extreme thinness may be cut with facility, while the size of the instrument is the same as that of the original. The cost is reduced more than one-half. Mr. Pratt, of this city, is prepared to make this apparatus at a reasonable charge.

The regular monthly meetings of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The August meeting will be held on the 15th, at which time there will be presented the following papers :

Eucalyptus in Dropsies, by Dr. J. B. Leary.

Thoracic Empyema in Children, by Dr. G. R. Fowler.

EDITORIAL NOTES.

——Sunstroke.—Dr. George K. Smith, who attended the 23d Regiment on their memorable July excursion to Philadelphia, as their surgeon, writes to the *Eagle* of July 12th, concerning his use of quinine injected under the skin for the relief of his patients who were prostrated by the heat. In his opinion, this treatment, which is the one now most in vogue in India, is more efficacious than any that has preceded it, and in a certain proportion of cases it "acts like a charm." The particulars of his own experience are not given.

——The National Medical Library.—A specimen fasciculus of the proposed catalogue of the 40,000 books and equal number of pamphlets, under the direction of the Surgeon General of the army, has been issued. Its seventy-two pages, quarto, reach the subject *air;* the subject of the *acids* fills twelve pages, closely printed. The plan is good, its execution careful, and its promised results so useful that it is devoutly to be hoped that Congress will give Dr. Billings the funds requisite for its speedy completion, but the times are adverse to such pro-

jects. As Dr. Petermann told the Geographical Society (July 10th), "Politicians cannot be expected to have much feeling and sympathy for the requirements of science". at a time when there is excitement over appropriations.

——Amphipleura Pellucida.—We have received from Dr. Charles Jewett, a micro-photograph, clearly and beautifully demonstrating the striæ in amphipleura pellucida, made with a Tolles 1-5th immersion objective of 115° angular aperture. This diatom is the highest object in order of difficulty on Möller's test plate, and is the most subtle test for an objective of any power, except the finer bands of Nobert's plate. Previous to 1870 no American microscopist had seen the lines on this diatom. In 1873 Dr. Hartnack, the celebrated maker of French objectives, said there were no more striæ on *amphipleura pellucida* than on the back of his hand. There must be very few low angled 1-5th of other makers, that can show such results. We believe Mr. Tolles' objectives are unequaled in resolving power, as they are unsurpassed in other qualities.

——Brooklyn Eye and Ear Hospital.—During the first six months in 1876 the Hospital has treated 1,879 new patients, an increase over last year's first half of 289. The average daily attendance this year is not far from 75 patients. Number of surgical operations performed during the half year, 309. Many of these were of apparently trivial character, but the removal of a small foreign body imbedded in the cornea is sometimes more difficult than an ordinary cataract extraction or squint operation, and may be vastly more important to the patient.

The medical officers cordially invite their brethren of this Society, and other persons interested in such work, to attend the clinics, witness operations and inspect the working of the Hospital.

Open daily *for the poor* at 2 P. M.

——Omission.—Drs. Hawley and C. F. Clark were present at the meeting of the American Medical Association; their names were omitted from the list in our July number.

——The Board of Health Report.—A report of the last Board of Health of Brooklyn, of which Drs. Conkling and Hutchison were the Sanitary Commissioners, has been printed, embracing a period beginning May 8th, 1873, and ending January 1st, 1875. It is a year behindhand apparently, but that is nothing unusual in respect to such publications; the New York report for 1873 has only recently appeared. This report makes a book of 140 octavo pages; contains the mortality statistics of three years, with several illustrative chromo-charts; the principal undertakings and operations of the Board; reports by the Sanitary

Officers—all members of this Society—setting forth some of the results of a good deal of downright hard work among tenement-houses, cow-stables and the like. This pamphlet marks the first effort in this city to make an extended showing of the work of its department of health. The *Argus* concludes a long review of the report as follows:

"The sanitary condition of Brooklyn is clearly exhibited throughout the entire report; the advantages and disadvantages of particular sections as places of residence are pointed out, and suggestions of improvements are made which commend themselves to the thinking reader. The intelligence of the gentlemen contributing to the report cannot be gainsaid, and their opinions, honestly expressed, must have their weight."

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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Vice-President.....J. S. PROUT, M. D.
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CENSORS.

A. Mathewson, M. D., (Senior Censor), 17 Clinton St., J. H. H. Burge, M. D.,
G. W. Baker, M. D., R. M. Buell, M. D., Chas. Jewett, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1874 to 1878.)

Drs. J. S. Prout, B. A. Segur, S. G. Armor,
Drs. R. M. Wyckoff, W. H. Thayer, J. H. H. Burge,
Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. H. L. Bartlett, B. A. Segur, W. F. Sanford, C. Jewett, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, W. E. Griffiths,
Drs. W. G. Russell, N. Matson, F. W. Rockwell.
Drs. R. M. Buell, W. F. Sanford,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. Corey, B. A. Segur, S. G. Armor, J. S. Prout.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, AUGUST 15, 1876.

KINGS COUNTY IN 1776.

By R. M. WYCKOFF, M.D.

It was the will of the Continental Congress to hold the city of New York against the British forces under Howe. General Washington promised, although with many misgivings, to do his utmost to check the enemy. This necessitated the battle of Brooklyn, or of Long Island as it is commonly called, which was fought August 27th, 1776. The American forces numbered 17,000 men, of whom 3,600 were on the sick list, a list constantly increasing in size. Dysentery and putrid fevers were prevalent ; there was an imperfectly organized hospital service, a scarcity of surgeons and of medical supplies. Congress appears to have been slow to recognize the importance of the medical department of the army; in 1775 very little legislation for its organization had been undertaken, and not until July, 1776, were any efficient regulations passed. That the condition of the hospitals was not greatly worse, is probably due to the fact that many of the very best of the profession were devoting their best energies under the impulse of a glowing patriotism. Dr. Morgan was at the head of the general hospital, Dr. Shippen was chief physician of the "flying camp," Dr. Benjamin Rush was in Congress and afterwards in the Middle Department : these were lately professors in the pioneer medical college of this country, founded

in 1765. Drs. Jones and Samuel Bard, of the New York medical school, actively assisted the Provincial Congress in establishing regimental hospitals and in other ways. These were men of pre-eminent ability, who would have been a credit to any nation or time, and they are but a few of the names on our professional bead-roll worthy to be filed. Dr. John Jones, a native of Queens County, the first professor of surgery, as an exclusive chair, in this county, a surgeon in the French war, the friend of Franklin and Washington, was the author of the first surgical book, published in 1775, "Plain, Concise, Practical Remarks on the Treatment of Wounds and Fractures; to which is added a short Appendix on Camps and Military Hospitals: principally designed for the use of young Military Surgeons in North America." This plain and modest hand-book of about one hundred pages appeared at a most critical time, and answered an almost providential purpose; a second edition was printed in 1776. Its author is most worthy to be called the Father of American Surgery, just as Morgan is known as the father of medical education.

The chief officers in the Eastern Department were: the Deputy Director-General, Isaac Foster; the Physician-General of the Hospital, Ammi R. Cutler; the Surgeon-General of the Hospital, Philip Turner; Physician and Surgeon-General of the army, William Burnett (some of these titles are not now used or understood); these officers were probably present at the battle of the 27th; at least, Dr. Turner is known to have been there. Dr. John Duffield, afterwards a resident of Brooklyn, is said to have been present as medical officer to a Pennsylvania, although the roster shows one of that name attached to Crane's (Mass.) Artillery; after him a street is named in this city. Dr. James McHenry, the eminent citizen of Baltimore, who afterwards became Secretary of War, we know from Graydon was at this time with the army, and probably in the capacity of volunteer surgeon's mate. Surgeon William Eustis, also a Secretary of War at a later period (under Mr. Madison), was probably with the Massachusetts regimental hospitals at this time; he had been in the army since early in 1775. The names of others who afterwards distinguished themselves in public or educational careers might be surmised as present, as Malachi Treat, McKnight, Rodgers, William Pitt Smith, Crosby and Isaac Ledyard: Treat, Smith and Ledyard afterwards served in the position of Health Officer of the port of New York, and fell victims to yellow fever while at their post. Ledyard was a resident, possibly a native, of Queens County, was educated abroad, intellectual and honorable, when the war closed was second in rank in

the medical purveying department. Philip Turner, already mentioned, must be regarded as a leader of that long line of American Surgeons, bold to dare and skillful to perform every difficult feat in their art. He was esteemed fitted for the headship of the hospital department, but expediency and the desire of the Commander gave the place to another and most competent rival. Shippen said of him that neither in America or Europe had he seen a finer operating surgeon than Turner; and even the strait-laced foreign army surgeons did not disdain to be associated with him when yet a young surgeon's mate in the French war. To a fine person and gracious address he added the qualities of a firm will and strong common sense. The last fifteen years of his life (1800–15) were spent in New York, as army surgeon, stationed at Governor's Island.

The number of surgeons attached to the army at this time is not known, and the bare fact that three medical officers appear as prisoners in the returns of the British commissary after the battle is all that can be stated numerically. Dr. Davis, of Atlee's battalion, was one of these.

The disposition of the wounded was in houses and buildings within the lines for the severe cases. In Boerum's bolt-house several rows of beds were filled. One of its occupants was a wounded British officer. Those cases that could be removed were transported to the general hospital, occupying houses on Manhattan Island, from Kip's Bay to Bloomingdale.

On the British side, the New Utrecht church became a hospital and prison. After the battle they made use of the mansion situated on Brooklyn Heights, known as the Livingston or Joralemon house. During the British occupancy it was generally used as a naval hospital. The Remsen house, where Grace Church now stands, was used for hospital purposes. The treatment bestowed by the British on their wounded prisoners was shamefully bad. An affidavit sworn by Lieutenant, afterwards Colonel, Robert Troup, himself among the prisoners, sets forth that the usage was such that numbers died daily, and nearly one-half died in less than five months' period of captivity. Mr. Troup was confined on the transport "Mentor," lying opposite Gravesend, when the wounded General Woodhull was taken thither. The treatment of this estimable and veteran patriot was simply brutal from the beginning of his captivity until death terminated his sufferings. He, with many others, perished for want of care and the necessaries of life.

General Woodhull was on detached service in Queens County at the time he received his death wounds. Being overtaken by a British troop of horse, he surrendered to its officer, said to have been Captain Oliver Delancey. This officer hacked his prisoner with his sword over head and arms, and would have slain him then and there if another officer had not interfered. Drs. Ogden and Minema, of Jamaica, offered their professional services, but a British surgeon was directed to dress the wounds, ten in number. He was taken to the New Utrecht church, thence to the prison-ship "Pacific," where officers and men were crowded together so densely that all could not lie down at the same time. The lack of provisions amounted to almost total deprivation of food. The officers were, after a time, separated from the privates, and placed on the "Snow," or small transport "Mentor." This had been used as a cattle ship, and was as filthy as an uncleaned stable. No blankets or bedding were allowed. Amputation of the arm becoming imperative, he was taken to a house in New Utrecht, and there died on Sept. 20, 1776.

Another coarse piece of work will show the position of the British surgeon of those days. Captain Westerhange and Lieutenant Conraddy punished a corporal by beating him with the flat of their swords over his waistcoat, so that he died next day. He was standing; the captain first gave a number of blows, and then the lieutenant began, but before he finished the man was so feeble that the captain stood in front and held him up. The man then lay on the ground, while the surgeon's mate examined him, which was a mass of bruised and blistered flesh. His back was roughly scarified by the mate, and removed to a barn, where he died the next day, never having uttered a word after the first blow (cerebral compression, perhaps, the poor corporal's condition.)

Dr. Thacher tells us the English surgeons were skillful operators, the Hessians were clumsy and uncouth, and wanting in all sympathy. Those were trying times for the prisoner, for the sick and the wounded; in fact, the prisons rapidly became hospitals, and then the grave-yard closed the scene.

EUCALYPTUS IN DROPSIES.

By J. B. Leary, M.D.

As I intend this paper to be the history of a few cases of general dropsy in which Eucalyptus was employed, I will not speak of its botany other than to say that according to Prof. Von Mueller there are one

hundred and thirty different species of this tree; and of these I have chosen Eucalyptus Globulus, and the preparation the fluid extract, to be the subject of my paper. It is now nearly four years since I first prescribed Eucalyptus as a specific in gonorrhœa, and it was while treating this disease that I first noticed its remarkable diuretic properties, "the amount of urine passed by some patients while taking it being enormous." I then thought, since this causes such an abnormal activity of the renal organs, would it not be advisable to give it in cases of dropsy, and waited an opportunity to verify my suspicions.

The first case in which I tried it was a gentleman, Mr. R., a resident of Jersey City, who had been told he had acute Bright's Disease and was given but a few weeks to live. I had but little hope of helping him until I saw him the following week, when his condition was so much improved I was led to continue its use; and in seven weeks had the satisfaction of having him go about and assume his usual avocation (packing-box maker.) This patient, when first seen, was unable to lie in the recumbent posture, his limbs were swollen past the capacity of his pantaloons, and he suffered considerably from dyspnœa. I gave him the fluid extract in doses of 10 minims four times a day. I should state that on examination I found a small quantity of albumen in the urine, but found the liver enlarged and hobnailed, also cardiac insufficiency. First saw this patient December, 1874; up to date has had no return of dropsy; discontinued Eucalyptus six months ago.

Second Case.—Mrs. McC., aged forty-nine, widow, occupation housewife, first noticed she had dropsy in 1872; had been tapped three times before I saw her, December, 1874, and each time two gallons of water were drawn off.

I was called, as I have said, December, 1874, and had to tap to relieve dyspnœa; obtained about a half pail of liquid. After tapping placed her under Eucalyptus and Digitalis, as her dropsy was due to cardiac hypertropy by dilatation; has never had any return of dropsy; still continues taking the remedies first prescribed and enjoys very good health.

Third Case.—Mr. Wm. D., aged 36, occupation none. When first seen, Feb., 1875, had been but three months discharged from the army; was then under treatment, and his physicians, Homœopath, had given him up to die. I refused to give him anything, as I thought he had but a few hours to live; but at his own urgent solicitation to give him something, I prescribed Digitalis and left. The following day I found him easier, and added Eucalyptus to his Digitalis. For four days he remained in "statu quo," and on the fifth day he remarked his legs, which were

very much swollen, did not hurt him, and he thought they were getting smaller. That day his left calf was 21 inches in diameter, his right 23; both his thighs measured 33 inches. Fourteen days after his calves were 14 and 16 respectively, his thighs 26. They continued to diminish, until five weeks after taking his first dose his calves measured, left 10, right 11; he was able to get on his shoes, and was walking about. This patient gave a specific history. Advised him to stop Eucalyptus, but continue Digitalis, as he had slight murmurs. Five months after was called to see him again. His condition was not quite so bad, but his testicles were very much enlarged and painful; did not tap them, but again placed him under Eucalyptus, and he got well, and has to continue taking it. Cause of dropsy is his cardiac disease.

Fourth Case.—Mr. J., when first seen, had general anasarca, but not to such a great extent as previous cases. Was placed under Eucalyptus for seven weeks, when he discontinued all medication, being in perfect health, with the exception of cardiac hypertrophy, which does not trouble him.

The fluid extract of Eucalyptus Globulus was given in these cases in doses of ten minims, and never increased, but in some diminished to eight minims, the system at no time tolerating it; and in case three it acts fully as well to-day as did the first dose. I have also given it in a great many cases of passive congestion of the kidneys, and always with benefit. In fact, whenever I need a diuretic I prescribe it, and have yet to see the case in which it failed, if the kidneys were not so far diseased as to be inert and lose their functions.

Patients while taking this drug would sometimes complain of a very severe congestive headache, accompanied with tinnitus aurium; that their appetite was much better, though no tonic was prescribed, showing a similarity to quinia, and in some cases a laxative condition of the bowels was produced.

Some may try this remedy and be disappointed in the result, which I think will be owing to the preparation used, or rather by whom prepared. Some may wish to give it in combination with other diuretics, and will find most preparations to be incompatible, owing to the resin which it contains being precipitated. I have found that prepared by the firm of Lazell, Marsh & Gardner, of New York, to be the best, as it does not precipitate with acids or alkalies.

EMPYEMA IN CHILDREN.

By G. R. Fowler, M.D.

E. B., aged twenty-one months, was brought to my office June 16th, 1875, with the following history: Four months ago she suffered from scarlatina, immediately following which there occurred a pulmonary affection which the attending physician called chronic pneumonia.

When I first saw her, the patient presented the appearance of a gasping skeleton. The dyspnœa was urgent, the alæ-nasi widely dilated, the surface cyanotic, and the respirations about forty to the minute.

Auscultation showed entire absence of respiratory murmur and vocal resonance over left side of chest anteriorly. Vocal fremitus *absent* over the same area. Percussion revealed flatness over the whole anterior, and also of the posterior portion, except the scapular region, where dullness took the place of flatness. The apex beat of the heart was distinctly felt to the right of the sternum.

A fluctuating point was discovered in the fifth intercostal space about a half inch within the linea mammalis, into which I passed the needle of a hypodermic syringe. Upon withdrawing the piston the barrel of the instrument filled with pus. I at once passed a narrow-bladed scalpel through the intercostal space at the same point, and afterwards cautiously enlarged the opening with a probe-pointed bistoury. About twelve ounces of pus flowed out, no effort being made to aspirate what remained at the bottom of the pleural cavity.

The cavity was washed out carefully every day with a half per cent. solution of carbolic acid. Tonics and stimulants were freely given, and the child soon gave promise of a speedy and safe recovery. At the end of two weeks, the cavity having ceased to discharge pus, the wound, which had been daily dilated to allow of the irrigations, was allowed to heal.

For a week following this all went apparently well with my patient, when symptoms of a reaccumulation of fluid appeared, which physical exploration confirmed. Another opening was made at the same point as at first and about six ounces of pus evacuated.

A drainage tube, consisting of about two and a half inches of the small rubber tubing used with an ordinary Maw's feeding-bottle, having a number of perforations, was now passed to the bottom of the cavity. This was held in position by having coarse ligature silk, well waxed,

passed crosswise through the end protruding from the chest-wall and tied around the chest.

This arrangement was found to work admirably, and proved to be quite as efficient as the complicated and expensive canulæ and obturators used abroad, and described by Fraentzel in the fourth volume of Von Ziemssen's Cyclopædia.

Daily irrigations of the cavity of the pleura were now used, and frequent examinations made to determine the gradually diminishing area of the pus-secreting surfaces. These examinations were made by passing through the opening, after the removal of the drainage-tube, a small flexible French catheter, and thereby measuring the extent of the cavity. The irrigating fluid consisted of a half per cent. solution of carbolic acid, and an ordinary Davidson syringe furnished the means of conveying the solution to the cavity of the pleura.

Day by day, as the cavity diminished in size, the flexible rubber drainage-tube was shortened by cutting off a piece of the inner extremity. In about ten days the pulmonary and costal surfaces had so far united as to allow of the withdrawal altogether of the drainage-tube.

The child rapidly gained in weight and tone, and in a few days the opening entirely healed. The only trace of the disease is a puckered cicatrix and the flattening of the chest-wall.

The above case was a typical example of empyema or suppurative pleuritis occurring as a sequel to scarlatina.

Case Second.—Katie S., aged three months, was attacked on the 28th of January, 1876, with capillary bronchitis. In the course of a few days there were signs of collapse of lobules or atelactasis, as evinced by the occurrence of relative dullness posteriorly, increased dyspnœa with dilatation of the alæ-nasi.

At this time the temperature, which previously had ranged from 100° to 102° Fahr., rose to 104°, and the development of crepitant rales in the vicinity of the collapsed lobules indicated the supervention of circumscribed pneumonia. The dullness became yet more marked posteriorly; auscultation revealed bronchial breathing and broncophony; dyspnœa and cyanosis were increased. The temperature rose to 105°, and symptoms of exhaustion required the constant and free use of stimulants.

For weeks this child's life hung, as it were, by a thread. Finally the right lung underwent revolution, but the left side of the chest posteriorly presented all the physical signs of consolidated lung tissue. The dullness became flatness, this finally extending over the whole left side below the angle of the scapula. Auscultation at this time revealed ægophonic

vocal resonance, prolonged expiratory murmur and bronchial breathing. Palpitation showed distinct and well marked increased *vocal fremitus* upon the affected side.

At this time, two months and a half after the original attack, Prof. Skene saw the patient in consultation, and although the question arose as to the existence of fluid in the pleural cavity, patient physical exploration failed to reveal its presence. The conclusion was arrived at that it was a case of chronic infarction, and but little hope held out of its ultimate recovery.

A few days subsequently to this I determined to introduce a hypodermic syringe point into the pleural cavity and thereby remove any lingering doubt as to the nature of the disease by positively excluding pleurisy from consideration in the case. Much to my surprise, I found after exhausting the barrel of the syringe that it became filled with thick, creamy and "laudable" pus.

Here then was the solution to the problem, the "milk in the cocoanut," one might say. I had to deal with a case of empyema.

The same treatment as in the preceding case was instituted. A free incision was made, giving exit to about six ounces of pus. The soft rubber drainage tube was introduced, daily irrigations with a half per cent. solution of carbolic acid, and, as the pleural surfaces became adherent, and the cavity lessened in its area, the gradual shortening of the tube.

From this time forward the patient's progress was most satisfactory. The lung tissue became pervious to air, and again resumed its function. The flatness gave place to dullness, and this in its turn to normal resonance. The bronchial breathing, ægophonic vocal resonance, and vocal fremitus disappeared. The cough, although seemingly aggravated immediately following the operation, soon ceased, and the child rapidly increased in weight and strength.

The cavity continued to discharge pus for six weeks, at the end of which time, the tube having been daily shortened, it became difficult to retain it in position, and it was decided to remove it altogether.

The fistulous track healed kindly. A small cicatrix at the site of the incision, and slight flattening of the affected side, were the only traces left of the disease.

In the *Medical Record* for June 5th, 1875, is a communication from Prof. E. G. Janeway, entitled "Vocal Fremitus in Pleurisy and Pneumonia, and the Use of the Hypodermic Syringe in their Diagnosis." In the communication referred to, two cases are reported in which vocal

fremitus existed in what afterward proved to be empyema. In the first case the hypodermic syringe used as an aspirator revealed the presence of sero-pus, free incision was made and the patient recovered. In the second case the hypodermic syringe was used to aid in making the diagnosis, but owing to an imperfection in the instrument no fluid was obtained and the patient shortly afterward died. At the *post mortem* empyema was found to exist. No adhesions were found below the level of the liquid, and at the site where the vocal fremitus was felt.

THE POLLEN OF RAG-WEED (AMBROSIA ARTEMISIFOLIA) THE CAUSE OF HAY FEVER.

By B. A. Segur, M.D.

I asked the President's permission to read to the Society this evening the letter of Dr. Marsh, because I hoped that several of our members would be interested to make the observations suggested.

There seems to be sufficient grounds to justify the opinion of the writer of the letter, that in his own case he has found the cause of Hay Fever.

What an advance in the etiology of the disease this discovery is will be better appreciated by reading in so recent and high authority as Reynolds' System of Medicine, vol. III, page 521: "Particular smells will at once bring on asthma in some people, such as flowers—roses, for example. The commonest vegetable emanation having this effect is hay—this form of asthma being well known as Hay Asthma, and a part of that curious disease, Hay Fever." The progress of medicine is from such vague speculations as "emanations" to demonstrated agencies of disease, as when the acorns were discovered to be the cause of scabies. Even the differentiation of Hay Fever from other catarrhal affections is an advance, and was not made by Copeland in his Dictionary of Medicine. No doubt many of our members will have cases of Hay Fever under their observation this season, and will have opportunities to know if the pollen of the rag-weed appears in the atmosphere at the same time with the access of the disease.

The manner of collecting the pollen is suggested in the letter of Dr. Marsh.

A slip of glass prepared as directed may be left in any convenient situation in or about the house, and placed under the microscope daily or at convenient intervals of time; either a ½, ¼ or $\frac{4}{10}$ objective is sufficient for the view. The grains of this pollen are spherical about 1–1000 inch in diameter. The surface is covered with bristles, which give to the contour as seen under the microscope a cogged wheel appearance.

DR. SEGUR, Paterson, N. J., August 14th, 1876.

Dear doctor: I send you a specimen of the "Ambrosia Artemisifolia," as I promised, from which I think you can get plenty of pollen. If it does not shake off as yellow dust, put the slips in a glass for a few hours longer, and this will hasten the process of flowering. I have *no* doubt this is *the* cause of "hay fever" in my own case, and probably in all others that come on at this season of the year, although, of course, it may not be the cause to all, for other plants may produce pollen equally noxious to other individuals. Mr. Blackley, of Manchester, has, I think, completely established the following facts with reference to the "hay fever" prevalent in England:

1st. That the pollen of various grapes, when applied to the mucous membrane of the eyes, nose, lungs, will produce all the symptoms of hay fever—that is, to those persons subject to the disease.

2d. That the disease always occurs just in the season that these grapes are flowering.

3d. That the pollen from the grapes is diffused widely through the atmosphere. He found it in the middle of the city, far from meadows, and at extreme heights reaching 1,500 feet above the surface of the earth (collecting it by an apparatus attached to a kite.) From these facts—the sufficiency of the cause, and the presence of the cause—he has deduced the logical conclusion that is *the* cause of the disease. His facts and inferences are established by thorough and careful experiments. Now, with regard to our "hay fever" or Autumnal Catarrh. An opinion has been held for a long time that rag-weed is its cause, but it has not been established by experiment. Dr. Nyman relates some observations that tend to this conclusion, though not entirely satisfactory. My own observations strengthen this, and to my own mind establish it as the cause.

1st. For the past three years I have experimented—intentionally and accidentally—and produced all the earlier symptoms—severe coryza, etc.—by the direct application of the pollen to the mucous membrane of the nose. For instance, last week I wished to observe the pollen of another variety of Ambrosia—"trifolia" or "giant rag-weed"—gathered a few heads and put them in water in my room to ripen, then examining the dust pollen under a microscope, and not taking care to prevent it flying in the air, suffered all that day with coryza. I was well before the experiment and within 24 hours after. I tried the experiment two years ago in the same way, by ripening it prematurely, while I was still well and unaffected, and applying it to the nose, and with same serious consequences. After going to the White Mountains, and being entirely recovered, I found a small patch of rag-weed—rare in that locality—and with another victim made the same experiment and equally successfully—so successfully that we suffered for several days, and since that time I have never intentionally tried it, being satisfied in my own mind as to the power of the pollen to produce the symptoms.

2d. The experiments as to the prevalence of the pollen have not been repeated as frequently, but last year myself and a friend made some observations. I had made the apparatus used by Mr. Blackley for collecting pollen, and placed one in my own garden, and one in the suburbs of the city. I found pollen grains on the slides in both situations, more numerous in the country. My own experiments were from August 18th to the 25th, at which latter date I left town for an "exempt region," but the experiments were continued by my friend with the apparatus in the country. He found pollen constantly present on the slides thoughout the whole of September. Sometimes nearly 400 grains in a square centimetre collected in 24 hours. This slide was placed about 5 feet from the surface of the ground. He then placed a slide on the roof of the house, and after 9 hours' exposure found 49 grains on the same extent of surface. He

also sent to a friend in the centre of New York city (Twelfth Street) to place a similar slide in the attic window of his house; this was sent to him afterwards, and he found this, too, covered with plenty of rag-weed pollen. Further, we both separately found pollen grains in the "fuzzy" covering of peaches. These experiments seem to show the abundance of the pollen through air, and I would like very much to see them repeated by others, especially persons living in cities, and supposed to be far away from the plant. It does grow, however, everywhere. I saw to-day numerous specimens in the neglected grass plots in front of houses in New York (I was walking a few blocks in Twentieth Street). It grows luxuriantly throughout the country in every vacant space where the ground has recently been turned up, especially in new suburban streets. I should judge that it was the most abundant plant that flowers at this season. Futhermore, I forgot to say that the exempt regions are where the *plant does not* grow, as in parts of the White Mountains. I have seen a few patches here and there, but they are very scarce, and do not produce enough pollen to fill the air.

In preparing slides to collect pollen I have followed Blackley, and marked on them a square of about a centimetre, but this is only for the purpose of counting the number of grains daily deposited. He applied to this spot a mixture of glycerine 1 part, proof spirits 2 parts, water 1 part, with a little carbolic acid, and I have found this a satisfactory mixture. He used carbolic acid because he thought that bees and other insects sometimes eat the glycerine and pollen. The best time to observe for rag-weed pollen is in September, say from 5th to 15th, as it is then probably at the height of the flowering season, although it ought to be found before that time and on the end of the month. If you would be kind enough to make a few observations at that season, you will greatly oblige me.

I think that the best analogy of comparison for hay fever is with the cutaneous poisoning by ivy—rhus toxicodendron—and other plants. We know that a small minority of persons have their skins severely inflamed by the application of this plant, or even by effluvia from it, it is said. What causes the susceptibility in the individual we do not know, but we call it an idiosyncrasy, and consider the poison ivy the cause of the disease, and do not regard it as mysterious. Hay fever, however, has not yet been taken from the region of the mysterious—wonderful stories are told of it—and it is considered inexplicable in its origin and nature. It is to be hoped, however, that it may soon be viewed rationally, and that its cause being known we may hope for a discovery of its cure or prevention. Unfortunately it happens that the persons most interested in it—the victims—are least able to investigate it, some being obliged to run away to other regions on account of the severity of their attacks, and most all being unwilling to experiment upon themselves, and take even a possibility of incurring suffering.

Yours very truly,
E. J. Marsh.

(Large quantities of the rag-weed are to be found on Kosciusko Street, between Marcy and Tompkins Avenues, in this city.—*Ed. Proc.*)

POSITIVISM IN MEDICINE.

Abstract of Remarks before the Kings County Medical Society, by Dr. E. Seguin, of New York.

In pursuance to previous action (for which see Transactions of 1874, '75, '76), the American Medical Association has charged its delegates to urge upon the International Medical Congress of Philadelphia the pre-

paration of a plan of uniformity in physic, applicable in all countries. The uniformity of processes, of technology, of nomenclature, of scales, of measures, of means of record, has immediately preceded, that is to say prepared, the modern progress of sciences, of arts, and of once humble, now justly proud, industries.

Physic has not kept itself estranged from this movement, since Louis, Andral, Chomel founded the *Numerical Method of Observation*, which is medical uniformity founded on mathematics.

Consecutively, specialists and pharmaceutists advocated for their respective departments uniformity and mathematical precision. What men like Dumas, Mialhe, Bouchardat, Dunders, Javal conceived to be a necessity for some parts of our art, cannot be a superfluity for its whole.

To American physicians belong the honor of having conceived and supported this plan in its entirety.

It was submitted in 1873 to the New York Library and Journal Association; to the American Medical Association, meeting at St. Louis; to the British Medical Association, meeting at London; and to the French Association for the Advancement of the Sciences, meeting at Lyons. In 1874 to the American Medical Association, meeting at Detroit; to the British Medical Association, meeting at Norwich; and to the French Association for the Advancement of the Sciences, meeting at Lille. In 1875 to the International Medical Association, meeting at Brussels.

In 1876 the American Medical Association, after hearing the reports of its former delegates, charged them again with the mission of advocating, before the International Medical Congress, the necessity of preparing a plan of uniformity in the means, scales and records of medical observation.

It is to realize this truly international progress that we want the concourse of your delegates to the Medical Congress.

Conscious of our own incapacity to carry this important measure, we demand for it the help of the solid men of the profession.

THE METRIC SYSTEM.*

TABLE OF EQUIVALENT VALUES.

WEIGHT.

1 kilogram	=1,000	grams. (2.6795 pounds Troy).
1 hectogram	= 100	grams. (3.2154 ounces).
1 decagram	= 10	grams. (0.3215 ounce).
1 gram.	= 1	gram. (15.4339 grains).
1 decigram	= 0.1	gram.
1 centigram	= 0.01	gram.
1 milligram	= 0.001	gram.

1 kilogram is equal to a weight represented by one liter of distilled water, at 4° C.†

LENGTH.

1 kilometer	=1,000	meters (0.6214 mile).
1 hectometer	= 100	meters (19.8830 rods).
1 decameter	= 10	meters (32,8070 feet).
1 meter	= 1	meter (3.2807 feet).
1 decimeter	= 0.1	meter (3.9368 inches).
1 centimeter	= 0.01	meter
1 millimeter	= 0.001	meter

CAPACITY.

1 cubic meter	=1,000	liters (35.3104 cubic feet).
1 cubic decimeter	= 1	liter (61.016 cubic inches).
1 cubic centimeter	= 0.001	liter (0.06102 cubic inch).

1 liter=1,761 imperial pints=2,113 pints wine measure.

The stère, the unit of solid measure, contains one hectoliter (264.17 gals., or 1,308 cubic yards).

The are, the unit of surface, contains a hundred square meters (119.6 square yards).

1 inch	= 2.5 centimeters (nearly).
1 foot	= 3.048 decimeters.
1 quart, wine measure,	= 0.946 liter.
1 pound Troy	= 0.373 kilogram.
1 ounce Troy	=31.104 grams.
1 acre	= 0.4046 hectare.

* Many of the names in the French system (like our "dime") are not in practical use; e. g., hectometer, decagram, etc.

† In the centigrade scale O (32° + F.) is the freezing point; 100° + (212° + F.) is the boiling point. Five degrees C. correspond to nine degrees F.

THE regular monthly meetings of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

THE September meeting will be held on the 19th, at which time there will be presented the following papers :

Lateral Amyotrophic Sclerosis with bulbar paralysis, by Dr. J. C. Shaw.

Contagious Diseases of Children, by Dr. Benjamin Edson.

An Anteversion Pessary, by Dr. H. Fearn.

Mr. R. D. O. Smith, of Washington, D. C., will exhibit and explain, by models and cartoons, his Odorless Water-closets, by which he guarantees *complete and entire exclusion of sewer gas* from any house.

(Dr. Shaw will present his patient to the Society, and as the case is rare and of great interest, and the patient cannot be detained long, the members will need to be prompt in attendance.)

EDITORIAL NOTES.

——THE PROFESSION AND THE NEWSPAPERS.—The attention of the Council has been called to the question of ethics involved in the publication by members of the Society of letters, etc., in the newspapers. The Council holds the opinion that the present sentiment of the profession does not favor medical communications of a personal character.

The accompanying little card was, in 1872, sent to all members; as it may not be familiar to all at the present time, it is timely to reproduce it here :

> "The Council desires to call the attention of members to the fact that the names of certain members of the Society have recently appeared in the public prints in connection with medical subjects.
>
> The Council, having charge of the ethical relations of members, hereby gives notice that such cases will be investigated."

The Council calls to mind the fact that this Society has a standing Committee on Public Instruction, to which it would be fitting to refer all matters important to be made known to the public. If any mem-

ber prefers not to act with that Committee, or if he thinks he has an especially urgent message to deliver to the laity, it would be in accordance with the spirit of our ethics to sink his personality for the time being. This may readily be done by the employment of an initial or *nom de plume*, instead of the full name, in or after articles intended for the medical edification of the secular press.

——At Coney Island, what are the wild waves saying but that the garbage of New York is a great nuisance to Kings county? Bathing has at times been prevented on account of the vile material thrown upon the beach by the rising tide. Fourteen scows make a daily trip from New York to the open sea; they do not venture out very far, for they are so old and rotten that they are in constant danger of being swamped; they have to watch the wind and go with the tide. This nasty fleet carries the street-sweepings as well as garbage and offal of the empire city in such a way that it is blown off the boats all along their course when there is any breeze. And much of their cargoes does not sink when it is dumped out at sea, but is borne to and fro by the tides—a most disgusting *flotsam*, which, according to Webster, "belongs to the King."

——The Surgical Oil Painting at the Centennial, in the department of the Surgeon-General, that has excited so many conundrums, is stated to be a representation of Prof. Gross operating on a necrosed tibia. It was rejected from the art collection on account of its excessively gory aspect.

——Gastrotomy has been performed twenty-two times for disease of the œsophagus; all having been followed by a fatal issue, the interval after operation varying from a few hours to twelve days. It has been performed nine times for the removal of forks or other foreign bodies; all these cases have made good recoveries.

——Vaccination in its Relation to Armies.—It is always in order to relate the triumphs of vaccination. In the German army revaccination is carried out with a great degree of thoroughness; among the French, on the contrary, it is less valued and indifferently practiced. Statistics collected by the German authorities show that during the late war their army, which numbered nearly a million, lost by small-pox not more than 286 men, while the French lost nearly 26,000 men—a small army—by that disease alone.

——Salicin in Rheumatism is a treatment of which favorable mention has been made in the English journals. A curious confirmation of the virtues of the drug comes to light in the fact that for many a

long year the Hottentots of the Orange River country have been in the habit of curing that disease by a tea made from the "tops" of the willow; that is, if this part of the tree may be assumed to yield "salicin" as well as the bark, from which it has heretofore been obtained. Until recently this product has been known as a remedy in intermittents.

——Chromatic.—An interesting question is agitating the Suffolk County Medical Society. Recently J. K. was arrested on the charge that he was the father of the child born to Dr. T.'s black cook. On the trial several physicians were called to testify to whether the paternity of a white child born of a negro could be determined. The doctors differed about it. After an inspection of the child, some said its father was black and others that he was white. At any rate, the jury believed he was black and acquitted the accused. The Medical Society have the question under consideration for debate at the next meeting.

——The Pollution of Rivers is the evil which the last Mass. Board of Health Report (1876) principally attacks. It plainly declares against the use of running streams as sewers, and every city and every town which produces filth should be required by law to dispose of it in its own limits. The leading paper, on the pollution of certain river basins in Massachusetts, is by James P. Kirkwood, a sanitary engineer living in this city. Other most valuable essays are to be found in this report, which makes a portly volume of nearly 600 pages, and contains not less than fifty maps and plates. The paper on House-Drainage is plainly written, and the book, as a whole, is destined to save lives by causing a spread of sanitary knowledge.

——Yellow Fever in the Harbor.—As in former years, vessels from Havana and other infected ports bring to the Quarantine Hospital occasional cases of yellow fever. At a recent date there had been received this year 13 cases, four of them fatal. Dr. Vanderpoel, the Health Officer of the port, is reported in a daily paper to have said that there is no danger that the disease will extend to the cities of the harbor. The account goes on to say that—

"Yellow fever is a very peculiar disease, and differs greatly from ordinary malarial fevers. It is never originated in latitudes higher than 43°, or in altitudes less than 200 feet above the level of the sea. It cannot be propagated through the air beyond 200 or 300 feet from the place where it is originated. It can only be transmitted by the carrying of the germ, and although sometimes propagated at second hand, yet is never propagated at third hand. Last summer when it was so virulent at Shreveport, Louisiana, isolated cases were taken from that city into the country, but these cases did not cause others.

"The precautions taken in fumigating and disinfecting vessels in quarantine are so thorough that no apprehension need be felt of any epidemic in this city. When proper precautions are taken, yellow fever is not so dangerous as popularly supposed. The best preventive is cleanliness, and a lavish use of soap and water is the best disinfectant. Shipmasters have sailed between this port and Cuba in the worst yellow fever seasons without having a single case on board their ships, simply by enforcing strict personal cleanliness among their crews, and taking the necessary sanitary precaution against infection. A healthful mode of life, good ventilation and strict cleanliness will keep the disease at bay."

——The Medical Register is out, and with the single exception of the interspersion of advertisements through the text, its make-up is almost faultless. The Brooklyn list contains 380 names, of which 26 are newly registered. Some of last year's mistakes—not very many—still hold their place in the new volume; it is the best of its series.

——Prospect Park Lake.—An emerald green scum decorates a considerable extent of its surface. To some this is offensive and suggestive of fever, but the park government cannot smell it, and see no danger from it. One thing is certain, however, that it will be a fixed feature of the Park for some time to come, for the good reason that the lake has no outlet, "and is purified only by evaporation," very much as the Dead Sea is rendered limpid. The daily loss by evaporation in hot weather amounts to 500.000 gallons. The "wash" of the Park and its roads must carry into the bosom of the lake no little filth with every heavy rain. This scum will probably increase in extent and viciousness, and in time make itself smelt even by its engineers. An outlet to tide-water will cost not less than thirty or forty thousand dollars.

——Gastro-Elytrotomy.—In Dr. Playfair's recently published treatise on the *Science and Practice of Midwifery*, this operation is alluded to as far more promising than the Cæsarian section in cases of deformed pelvis; and the author expresses surprise that the operation is not even alluded to in any of our standard obstetric works. This daring operation will increase in favor as successful cases accumulate. The patient, who was elytrotomized in this city by Dr. Skene, made a prompt recovery; at last accounts both mother and child were living, and had been able to sit for their pictures at the photographer's.

——The following Preamble and Resolutions were adopted at the July meeting of the Society.

Whereas, The attention of this Society has been called to Senate Bill No. 923, which is designed to empower the President of the United States to appoint certain gentlemen to positions in the Medical Corps of

the Navy, *without being subjected to the examinations hitherto required by law* in such cases; and

Whereas, The disregard of the present laws *in any case* will operate as a precedent which might result disastrously to the professional standing and efficiency of the Naval Medical Corps, in the maintenance of which the medical profession of the United States have an especial enterest;

Therefore, Resolved, That the Kings County Medical Society, of the State of New York, do respectfully protest against the passage of Senate Bill No. 923, and that copies of this protest be sent to the Senators from New York, and to the Naval Committee of the Senate.

——Blaine's Defeat.—A strange statement has appeared in the public press, to the effect that "professional jealousy" was the occasion of the defeat of the Maine candidate at the Cincinnati Convention. The grounds of this jealousy are alleged to be the prominence which certain irregular practitioners sought to obtain in conjunction with the treatment of Mr. B.'s so-called attack of "sunstroke."

The Proceedings will hereafter be placed in charge of Capt. T. Charters, at the meeting-room of the Society. Back numbers, except I and IV, may there be purchased at ten cents a copy, or twelve cents if mailed.

——Dr. Joseph H. Crawford died July 17th, from injuries self-inflicted. He was a graduate of the University of the City of New York, 1872. He died at 86 South Ninth Street; he formerly lived at 217 Wyckoff Street. His age was about twenty-five years.

——Hay Fever.—Dr. Geo. M. Beard has written an exceptionally exhaustive treatise on this popular and aristocratic disease. By instituting a widely circulated correspondence, he has succeeded in gaining the individual experience of a large number of sufferers from this malady, and from the array of facts thus obtained he has evolved a theory of Hay Fever which appears sufficently satisfactory so far as the pathology of the affection is concerned, but which is disappointing in practically precluding the possibility of ever finding any specific for its cure. In Dr. Beard's opinion Hay Fever is a neurosis. This neurosis varies with the individual. The exciting causes vary with the individual. The special agencies of relief similarly vary. Dr. Beard dedicates the volume to the officers and members of the U. S. Hay Fever Association, and the Harper Brothers have issued it in attractive and convenient form.

——Preserving Ice.—Dr. Sampson Gamgee recommends very highly the following method of preserving ice in the sick-room. Cut a piece of flannel, about nine inches square, and secure it by ligature round the mouth of an ordinary tumbler, so as to leave a cup-shaped depression of flannel within the tumbler to about half its depth. In the flannel cup so constructed pieces of ice may be preserved many hours, all the longer if a piece of flannel from four to five inches square be used as a loose cover to the ice-cup. Cheap flannel, with comparatively open meshes, is preferable, as the water easily drains through it, and the ice is thus kept quite dry. When good flannel with close texture is employed, a small hole must be made in the bottom of the flannel cup; otherwise it holds the water, and facilitates the melting of the ice, which is nevertheless preserved much longer than in the naked cup or tumbler.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1876.

President.....Alex. Hutchins, M. D., 796 DeKalb Av.
Vice-President.....J. S. Prout, M. D.
Secretary.....R. M. Wyckoff, M. D., 532 Clinton Av.
Assistant Secretary.....J. D. Rushmore, M. D.
Treasurer.....G. G. Hopkins, M. D., 186 Gates Av.
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Orator.....J. H. Raymond, M. D.
Alternate Orator.....W. E. Griffiths, M. D.

CENSORS.

A. Mathewson, M. D., (Senior Censor), 17 Clinton St., J. H. H. Burge, M. D.,
G. W. Baker, M. D., R. M. Buell, M. D., Chas. Jewett, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK (1874 to 1878.)

Drs. J. S. Prout, Drs. R. M. Wyckoff, Drs. A. J. C. Skene,
B. A. Segur, W. H. Thayer, C. H. Giberson,
S. G. Armor, J. H. H. Burge, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. H. L. Bartlett, B. A. Segur, W. F. Sanford, C. Jewett, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, Drs. W. G. Russell, Drs. R. M. Buell,
W. E. Griffiths, N. Matson, W. F. Sanford,
F. W. Rockwell.

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. Corey, B. A. Segur, S. G. Armor, J. S. Prout.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

Proposals for Membership.—Dr. A D. Atwood, 92 Stuyvesant Ave., by Dr. Hunt; Dr. H. J. Hesse, 70 Johnson Ave., E. D., by Dr. Candidus; Dr. A. G. Kimberly, 12 Kossuth Place, by Dr. Burge.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, SEPTEMBER 19, 1876.

THE CONTAGIOUS DISEASES OF CHILDREN.

BY BENJ. EDSON, M.D.

From their prevalence at times in every community, from their sometimes serious nature, and from the great mortality often attending them, the contagious diseases of childhood—diseases communicable from one to another—seem worthy of special consideration.

Statistics collected at different times and from various parts of the world vary widely, but from a sort of general average we may conclude that of those born, from one-third to one-half die before reaching adult age. Probably not far from one-fourth of these early deaths are caused by contagious diseases. This term contagious I shall use in its broadest sense, undertaking no nice discrimination between contagion and infection.

It is not my purpose, and I shall by no means attempt an exhaustive consideration of this subject. Any such effort would, at the best, be both unsatisfactory and unprofitable. I shall forbear entering upon questions of diagnosis, some of which occupy a varying and unsettled borderland between croup, diphtheria, scarlatina and other eruptive diseases, nor yet weary your patience by attempting a rehearsal of what is well known in prognosis and treatment, all of which you may find fully considered in standard treatises upon these subjects. I shall content myself with briefly considering, and with little attempt at exhaustive research or wide

range of observation, with some latitude, perhaps, the bearing of some preventive measures in their relation to the communicable diseases of early life.

It is first to be noticed that while we speak familiarly of certain ailments as peculiar to childhood, there are few if any of them from which adults are wholly exempt. That they do prevail largely, not to say chiefly, among children, is to be explained by the fact that comparatively few pass the period of childhood without exposure to more or less of them. Another way of expressing the same truth is this: persons very generally have these ailments in early life, and therefore are but little subject to them in after years.

This is apparent when a community has long been spared the presence of measles, or scarlatina, or small-pox; when one of these is by any means introduced, it is observed that adults are scarcely more exempt than children. A very striking illustration of this is seen in the recent outbreak of measles in the Feejee Islands, where neither age, sex nor condition seemed to afford any exemption.

During our late civil war, filled as the ranks of the army were with numbers drawn from rural districts, where isolation is a means of exemption, and where many grow up without exposure, tens of thousands of soldiers contracted measles in camp; and it may not be amiss to say that considering their exposed condition, irregular life and absence of ordinary home comforts, the mortality appears to have been very low, little, if any, greater than in ordinary epidemics in communities with the most favorable home surroundings and medical attendance.

As a rule these diseases attack the same person but once. Just why this is so is a matter of mere speculation. In exceptional instances their occurrence a second, third or even a fourth time has been observed. It is a generally accepted theory, if not a demonstrable fact, that diseases are conveyed through the agency of minute emanations or poisonous germs, distinct, specific in character, each producing a disease only after its own kind.

It has been assumed that these germs act upon a congenial element found in the system, their action likened to that of a ferment; that in the presence of this unknown—something—lies the susceptibility of the individual—its absence being the element or condition of safety; that until this material, whatever may be its nature, is exhausted, or perhaps I should say neutralized, the disease will continue or the person still be susceptible to its influence.

On some such theory may be explained the protective action of vac-

cination, the vaccine virus neutralizing or destroying the *materies morbi* on which the variolous poison is presumed to act.

With respect to the theory of catalytic action, the mere presence of disease-germs in the system initiating abnormal changes, there are many striking analogies in physical science, but while plausible in theory, the rationale is more ingenious than satisfactory. Whatever theory serves to account for most of the phenomena observed is perhaps good enough for present purposes, until a better or more plausible shall be advanced or the true action shall be demonstrated.

Viewed in all its bearings—considering the liability to contagious diseases in after years, and their assumed greater severity—is it desirable that children shall be shielded and protected from them; or on the whole, will it not be better, and will not the total of mortality be actually lessened, by the general and promiscuous exposure of children to the contagious diseases?

At first thought this proposition seems barbarous and unworthy of a moment's consideration, but the question is by no means as definitely settled in the minds of parents as we may at first conclude.

Should you question the first score of mothers you meet upon this point, you will probably be surprised to find so many who seem impressed with the idea that in a general way it is the decree of Providence that children shall have measles, mumps and whooping cough; and while they may shrink from purposely exposing the dear ones to the graver diseases, lest in the event of any serious termination they would incur a measure of guilt, still, if by accident, or some chance or decree, their children should be exposed, and these inevitable childhood troubles got out of the way, why—with a sigh of relief—"the sooner it is over, the better."

There can be little hope of wholly banishing all these affections from any community, but in the natural course of things numbers there are who do wholly or in part escape. I do not consider it fully established that the mortality is necessarily increased by deferring the period to mature years; it may even be questioned whether children have them more lightly than adults, or that with them the sequelæ are any less serious.

Without, therefore, stopping to refute in particular various points that might be raised, without attempting to characterize the right or the morality of intelligent parents to in any manner hazard the life or risk the health of their offspring, I shall assume that it is the duty of every parent to shield and protect his children from all, even the milder contagious diseases; that it is likewise incumbent upon every good citizen to strive

to check the diseases that stand as a menace to every household where there are children.

By the ordinary association of individuals in society, bringing them into close communion with each other, contagious diseases are almost necessarily and unconsciously conveyed from one to another. On the street, in the railway cars, on the crowded boats and at public gatherings, the cleanly are brought into close contact with the unwashed; the unsullied in this democratic country are daily jostled by those whose clothing, person and very breath are foul with reeking odors from the abodes of poverty and filth, wretchedness and disease. We cannot escape them without withdrawing from the busy world, and no retreat is so secluded but the wandering mendicant follows, bringing the pestilence which we vainly seek to escape.

For purposes of education, children are necessarily congregated in considerable numbers, and in consequence of this aggregation of individuals, the facilities for the spread of disease are greatly increased. Under the most circumspect and careful supervision, into schools as into the best regulated families contagious diseases will sometimes be introduced. It is a familiar truth, and it is sometimes referred to as though it were criminal, or singular, or at least in some way preventable, that as soon as the city schools are opened contagious diseases among children are manifestly increased. This increase, to a considerable extent, is but the natural result of well established principles, inasmuch as in the schools the association of children from miscellaneous families is closer, is long continued and daily, for the greater part of the year. The schools are open also during the colder portion of the year, when at their homes people are crowded together for purposes of warmth, and good ventilation, so necessary to eliminate the poisonous germs, is largely dispensed with. It is well known that from this cause, to a considerable extent, small-pox especially is a winter disease. Over-crowding, wherever occurring, with want of sunlight and good ventilation, are conditions not favorable to the maintenance of life and health.

Another mode of spreading disease is beyond doubt by means of funerals, held over the remains of persons dying from contagious diseases; held frequently in the same rooms where the disease has been present for days, or weeks. It is a common thing in this city to see children present at such places, and it is by no means a rare occurrence that fatal disease is thus contracted. I respect the feelings of those who attend such obsequies from motives of sympathy or of regard, but such services sometimes seem to be held for the purpose of placating the criticisms or satisfying the morbid curiosity of a class of human ghouls, found in every

community, who derive a sort of sad enjoyment from the lying-in room, weddings and funerals indiscriminately. Public safety demands that in such cases the health authorities shall exercise due supervision and wholesome restraint.

It has been recently exemplified in our own city, that bodies are sometimes transmitted to distant parts of the country under circumstances of questionable propriety and without proper warning; such is liable to become a focus for a new departure of malignant disease.

Another source of danger which is just now attracting some attention in New York is the laundries. How much cause there may be for apprehension I do not know, but the subject is certainly one that demands the closest scrutiny.

The apparent want of ordinary precaution respecting wearing apparel, bedding, discharges and fomites generally, so often shown by people of average intelligence, is doubtless due to their ignorance of proper sanitary measures in respect to these matters. To some extent the blame for this state of things is due to the medical profession. Physicians, regular, irregular and defective, who ought to be well informed upon such topics, still continue to disagree respecting the communicability of several important diseases, and also concerning the means and value of certain preventive measures; and these conflicting opinions are not allowed to repose in obscurity, but are brought into bold relief by bitter partisan discussion—engaged in not always for the purpose of eliciting the truth, but too often for the promotion of private ends—are paraded before the wondering public, until the layman in perplexity is led to exclaim, "When *doctors* disagree, who shall decide?"

Is it not true that physicians in regular standing in medical societies, members, perhaps, of this society, do sometimes manifest a criminal negligence or indifference respecting the danger of contagion from scarlatina, diphtheria and small-pox; that they fail to point out proper preventive measures and means of disinfection; fail to impress the lesson of the danger to be feared from fomites?—indeed, do they not themselves go from one sick room to another, to their own families, perhaps, bearing and spreading the dread diseases it should be their aim to prevent as well as cure? I am satisfied from personal observation that such is sometimes the case, and that a recklessness in this regard gives the community just grounds for suspicion and fear.

Against variola vaccination affords a sure, safe and reliable prevention. The accumulated evidence of three-quarters of a century ought to be sufficiently conclusive on this point. And yet, in this year of Grace, 1876, the opponents of vaccination point, with almost malignant

triumph, to the ravages of small-pox in various parts of the civilized world: in England, the land of Jenner and compulsory vaccination laws; to our own country, with its small-pox epidemics; and still nearer home, to our own City of Churches, and its fifty or sixty deaths a week from this dreaded scourge. The simple answer to all this, however, is that small-pox prevails, not because vaccination is not a preventive, but because the people fail to be properly vaccinated and re-vaccinated.

That vaccination, with proper re-vaccination, affords a reliable safeguard against small-pox, needs, in this place, no argument. And while we feel inclined to condemn with some asperity those who resist vaccination for themselves and their families, let us consider that it would be wisdom on the part of physicians to try to remove some of the more plausible grounds of their objections. Some of them have heard of physicians using virus from sources more than questionable; some have heard of evil results from the want of ordinary caution in performing the operation with clean instruments; and some may themselves have been treated in an overbearing and offensive manner on account of their scruples or their peculiar views, which we must concede they honestly, if not intelligently, entertain. The opposition of some takes a personal form. They say, and with an appearance of candor, "You and yours being vaccinated according to your doctrine, you are protected. It need not concern you that I am not thus protected—I am willing to take the risk." The fallacy of this view is, that the "I" is made to include women and innocent children; and still further, we are bound to protect the indifferent on the broad humanitarian ground which recognizes a general philanthropy and involves the public weal. I am not prepared to advocate compulsory vaccination. It will doubtless be better to foster and disseminate in the community a proper understanding of this subject, so that personal interest shall point out to each one the wiser way.

Scarlatina is justly one of the most dreaded diseases. Its perverse and capricious contagion, its not unfrequently virulent form, in which it seems but little amenable to treatment, its serious sequelæ, all render it a dreaded visitor. Is there any reliable prophylactic treatment? The assumption that infinitesimal pellets of belladonna is at the same time a prophylactic and a specific has been too often shown to be groundless to call for more than passing notice. This claim may be classed with that other assumption of the same school of practitioners which with consummate self-assurance they propagate among the credulous, that under their peculiar treatment no patients ever die from scarlatina. Such a sentiment is abroad, and is daily to be met with in spite of oft-recurring facts to the contrary. The records of the Health Office, if they speak the truth, must certainly refute this arrogant effrontery.

I am not aware of any prophylactic treatment for measles. It is difficult to limit the spread of this affection, from the fact that its approach is so likely to be mistaken for a common cold ; and being highly contagious in its early stage, numbers are unconsciously exposed before the nature of the affection is determined. The most common complication or sequel is probably bronchitis, and the mortality from this is considerable. Not long since I saw several cases, in which vicious and almost uncontrollable ulceration of the cornea followed measles in children of strumous habit and depraved constitution.

Whooping cough, which is commonly considered one of the minor diseases of children, is credited directly with nearly two hundred deaths in this city alone, during the past year. Add to these the deaths reported under the head of convulsions, bronchitis and pneumonia, due primarily to whooping cough, and the total mortality from this cause is by no means insignificant. The uncertainty in any particular case respecting the time when the disease begins to be communicable, and on the other hand when it ceases to be so, renders its spread very difficult to control. As nearly everything ever used as medicine has at some time been considered almost a specific in this disease, and as any one faithfully used seems to afford about as good average results as any other, we naturally infer that the cough is but little under the control of any known remedial measure.

Diphtheria, which is popularly believed to be comparatively a new disease—mistakenly so, however—has latterly forced itself into prominent notice. It seems to be well established that an important, if not an essential, element in originating and propagating it is local unsanitary conditions, prominent among them soil saturation from defective drainage. As an epidemic it sometimes extends beyond the natural filth limits, but even then, cleanliness, good air and due observance of rest and diet will be largely effective in keeping diphtheria at bay. By whatever cause induced, it is beyond doubt communicable ; and it seems to be true that one attack does not to any considerable extent afford immunity from its recurrence.

It seems to me that what may properly be called a typical case of diphtheria differs widely from a typical case of croup, however closely the two may approximate in individual instances. In all such cases the contagious nature of diphtheria should be constantly borne in mind.

The various other communicable diseases, including those due to animal and vegetable parasites—diseases which in themselves are hardly to be considered dangerous to life or severely affecting health, I shall pass without special notice.

When called to treat a child for any of these acute affections, a thing to be early considered is, the constitution and general condition of the patient. If he be scrofulous, rachitic, tuberculous or syphilitic, either by inheritance or otherwise, the prognosis becomes more serious than when occurring in one without taint and in previous health. Dentition is a complication of some importance. I am aware that many imperfectly diagnosed ailments are charged to the general account of dentition, but we cannot ignore the fact that teething is often a serious physiological process, and attended with great disturbance of the nervous system.

Much of the early life of the young is spent in school, and it may not be amiss to turn our attention for a few moments to some of the noticeable features of modern school life.

In the first place, children are sent to school at too early an age. The legal school age is five years; but not unfrequently children are smuggled in still younger. Infants that never, sleeping or waking, have known what it is to keep still for five minutes at a time, are thus early initiated into the mysteries and miseries of primary school life. Here everything seems organized for the purpose of repression, while nature demands for the young freedom from restraint, the training and unfolding of the powers of mind, amusement and active life for the development of the animal functions. These little atoms are gathered into the great mill for grinding out ready-made men and women, and are made to endure, with four or five score of fellow-sufferers, some five or six hours of close confinement daily, for the purpose of receiving possibly a total of four or five minutes' instruction and attention from the teacher! As the child advances in years he is required to add some hours of home study to those of the regular school session. Still later, increased burdens and multiplied tasks are imposed upon him. The daily routine of child life may be somewhat after this manner: The young student rises late and feverish from a disturbed sleep following last night's over-study, with appetite impaired by consciousness of imperfectly-learned school tasks; hurries to school, carrying for lunch perhaps the semi-classical "cakes and pickles;" is driven through the day of recitation with little opportunity to glance at a lesson—the legitimate school-hours being devoted chiefly to the *recitation* of lessons prepared at home—and at night is turned out of the mill, empty, and is sent home to be prepared for the next day's inquisition. This cramming and over-crowding on the part of girls, as has been well shown by an honored member of this Society, comes largely at a period of life when the system is taking on new and important functions which demand for their healthy accomplishment full

physical and nervous vigor. What with the stimulus of parental encouragement and admonition, with the driving of anxious and interested teachers, with the emulations and rewards of school life, by coaxing, stimulating, forcing, the child is kept in the treadmill round, not for a few days or weeks only, but for ten months of the year, and for a period of five, ten, twelve or more years. Under such continued pressure is it any wonder that these little human pitchers sometimes crack, or that the poor tired brain loses its balance and the young victims lapse into mere chattering idiots, or stand out as warnings of educational folly, with nervous system prostrated and hopelessly wrecked ?

Some idea of this forcing system may be gained by referring to an examination of about two hundred pupils of the Public Schools, held by the Superintendent of Public Instruction of this city in June last. The exercises were written, and required steady work for seven consecutive working days. It will be sufficient to merely name the subjects in which they were examined. The list comprised Spelling, Etymology (Latin and Greek Rocts and Derivatives), Arithmetic, Drawing, Algebra, Geometry, Trigonometry and Mensuration, Grammar, Composition, Ancient History, Modern History of Europe, United States History, Constitution of the United States, Astronomy, Anatomy, and Physiology, Philosophy and Chemistry ! !

As regards this high-pressure system, the more popular private schools afford no exception ; indeed, in the matter of cramming and overwork they are only worse, if such a thing be possible.

It is a familiar fact that nervous disorders are alarmingly prevalent and obviously on the increase. This is due, to some extent, to the erroneous and mistaken opinions generally prevalent respecting the needs and proper mode of educating children.

Ophthalmic specialists are familiar with the impaired and disordered vision in the young from misuse of the eyes—from overuse, bad light, and sometimes from that abomination indulged in by school children, in imitation of the unwisdom of their parents, reading and studying on the moving cars. Dr. Agnew recently reported 700 cases of asthenopia, nearly 500 of them in women, and of these the larger portion had contracted the trouble at school.

And as the outcome of all this overwork and overstraining, without proper rest and relaxation, the nervous system, or the digestive system, or the respiratory or some of the special functions, become deranged and enfeebled, so that when the acute diseases, the contagious diseases of childhood do come, they find the victim, commercially speaking, below par, and the enervated system or function is of course liable to suf-

fer from the *weight* of the attack ; and if that organ or system be a vital one, life is thereby imperiled.

The philosophy I would inculcate is aptly set forth in the language of Harvard's Anatomical poet-professor, in the deacon's logic of the "One Horse Shay."

> "Tis plain
> The weakest place mus' stan' the strain,
> 'N the way t' fix it, uz I maintain,
> Is only jest
> To make *that* place as strong as the rest."

At five years, the legal school age, children are too young to endure well the severity of ordinary school life. The age of *ten* years for admission, as advocated by Dr. Rochester, is, for obvious reasons, an impracticable extreme. In large cities, in spite of compulsory school laws, the children of the poor, of widows and of disabled persons, are often compelled by the stern necessities of poverty to labor for their own and their parents' support. Some take final leave of school at ten or twelve years of age. All things considered, I am satisfied that seven years of age is early enough to send children formally to school, and there are good practical reasons why it should not be deferred to any later period.

There are good reasons why the evils of school life should receive the special attention of physicians. Many need not go far outside their own families or their own personal experience and observation, to discover something of the evil I have merely outlined. Physicians are also brought into daily contact with those who thus suffer, and with parents themselves. They can raise a warning voice, can speak with some authority, with every prospect of being heard and heeded.

A few years since, in Boston, the injurious effect of the cramming system became so apparent in the rapid increase of nervous affections among the children of that city, that the physicians were constrained to enter their protest urgently and decidedly against it. The people were soon satisfied as to the true cause, the attention of the proper authorities was called to it, and as a result they directed that no out-of-school lessons should be assigned to children of the Primary Schools, nor to girls of the Grammar Schools; nor should the lessons for home study assigned to boys of the Grammar Schools be longer than a bright boy could master in an hour.

In every city in this country some such reform is needed in this matter of trying to make philosophers of babies, of expecting children to master half the arts and all the sciences.

In conclusion I would say:

1. The so-called childrens' diseases are not confined exclusively to the young.

2. Children should at all times be carefully protected from the contagious diseases.

3. Sanitary measures should be scrupulously enforced whenever and wherever the public safety demands.

4. Physicians should inform the public what precautions are necessary for safety, and should themselves be careful not to be the means of spreading contagion.

5. The legal school age should be fixed at seven years; no home tasks to be assigned to younger pupils, and they should be very much abridged for the older ones.

6. The health and vitality of children should at all times be kept at the maximum. To this end all depressing influences and agencies should be watchfully guarded against, that when the diseases of childhood that cannot be escaped do come, the child shall have the satisfaction and security of being in the best possible condition to meet them.

THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

THE October meeting will be held on the 17th, at which time there will be presented the following papers:

An Anteversion Pessary, by Dr. H. Fearn.

Micro-photography, by Dr. C. Jewett.

Remarks on the U. S. Pharmacopœia of the Future, by Dr. E. R. Squibb.

Presentation of Micro-photographs on Measurement of Blood Corpuscles in Criminal Cases, from Dr. J. J. Woodward, U. S. A., of the Surgeon-General's Office, by Dr. E. R. Squibb.

The latest investigations into the Genesis of Tubercle, by Dr. N. B. Sizer.

EDITORIAL NOTES.

THE DEBATE that ensued on the reading of Dr. Edson's paper, which occupies the prominent place in this number of the PROCEEDINGS, marked an epoch in the deliberations of the Society. It was protracted till a late hour, and would have been participated in to a much greater extent, had not the previous preparations for the future meetings of the Society been held to be of such a character as to prevent the debate from being carried over to another meeting.

It is possible to give but the merest outline of the suggestions inspired by this paper.

DR. WALKER thought it difficult at times to distinguish mild cases of varioloid from severe cases of varicella, and suggested that carbolic acid is a preserver and not a destroyer of the poison of scarlatina.

DR. GARRIGUES said that adults were as liable as children to these diseases, and instanced an epidemic of measles in the Faroe Islands, in which children and adults suffered alike. A study of this epidemic developed the fact that the stage of incubation was from 13 to 14 days.

DR. SHERWELL mentioned the fact that Hebra considers the poison of variola, varicella and varioloid the same.

DR. A. OTTERSON expressed himself in favor of compulsory vaccination, by reason of the protection against variola that vaccination affords, and because of the damage to property caused by the presence of variola in dwellings.

DR. BELL spoke in favor of compulsion, both as regards vaccination and other measures of health. He also urged the use of certificates by physicians in cases of school children convalescing from contagious diseases, as to the proper time for their return to school.

DR. SKENE felt that physicians were under constant pressure how to act wisely in relieving their young patients from quarantine.

DR. RAYMOND spoke of the practical working of already existing rules. He said that the law requiring every child to show evidence of vaccination is a dead letter, and the recommendation of the Board of Health to the Board of Education, to adopt the certificates above referred to, had been laid on the table.

Dr. Stuart remarked the decline in measles and other contagions since the closing of the public schools, and also stated that the large proportion of deaths from variola occur in unvaccinated children.

Dr. W. C. Otterson stated the fact, and was sustained by others, that when a pregnant woman is suffering from variola, no immunity is afforded to the child.

Dr. Segur stated that 88 per cent. of the cases received into the London Hospital had been vaccinated.

On motion of Dr. Stuart, this whole subject of the prevention of the contagious diseases of childhood was referred to a committee composed of Drs. Segur, Edson and Skene, to report at their earliest convenience.

——The Monthyon Prize for Medicine and Surgery.—The Monthyon Prize of Medicine and Surgery was accorded by the Academy of Sciences of Paris to A. Guerin for his essay upon the use of wadded bandages in amputations. This idea was first suggested by Pasteur, who believed that in this way the access of air to the wound, sometimes very desirable, would be permitted, while at the same time all organic germs floating in the atmosphere would be excluded, and which by their contact with the wound might cause a development therein, tending to produce various complications of greater or less danger. The actual experiment was made by Guerin, and this kind of treatment has now become a well-established method in surgery.

——Stricture treated by a modification of the hydrostatic press. In the *Ohio Medical Journal* for August is a letter from a "country doctor," which opens with, "You know the trouble that every practitioner has with stricture of the urethra, and especially those practicing in the country, *etc.*" To this hapless class he presents the following expedient for passing the catheter in cases that foil all milder measures: A gum catheter is passed nearly to the point of resistance; to this a half-yard of rubber tubing is added; and to this an 8-ounce syringe. By this means the pressure of a column of water is brought to bear, steadily or intermittently, for a short time on the stricture, which generally succumbs speedily.

——The Reduction of High Temperatures continues to be studied from every conceivable stand-point. In addition to cold water and air applied externally and an increasing number of anti-febrile drugs (as quinia, salicin, salicylic acid, gelsemium, ergot, aconite, etc.), it is lately proposed by Dr. Rutenberg, of Vienna, to throw large quantities of iced water into the lower bowel, thereby not only cooling the intestinal vessels, but also the aorta and vena cava. He tried the method on his

own person, and found less discomfort from the cold water than he had expected. In corpulent patients this plan is thought to present some advantages over the use of cold water externally applied.

——The Subcutaneous Injection of Ether in collapse following post-partum hemorrhage has been discussed by the Dublin Obstetrical Society. Dr. Macan recounts a critical case which recovered under the use of three syringefuls (the quantity is not clearly stated, but it was probably a drachm and a half) of ether. The response was almost immediate; no subsequent trouble. Dr. M. adds that Professor v. Hecker has frequently injected fifteen syringefuls (about four drachms), three to five at a time, at short intervals. The effect is transient. The preferable site is the abdominal walls; if binder is on, the gluteal region. The only precaution noted is to pass the needle deeply enough; "if you fail to do this, you will probably have troublesome abscess." Hecker has seen no abscess at the seat of injection. Drs. Wilson, McClintock and Atthill approved the treatment. The latter gentleman has had an apparently moribund case of placenta prævia recover after the injection of "two syringefuls, or about a drachm," of ether; not one bad symptom. —*The Obstetrical Journal of Great Britain and Ireland, July.*

——Mortality by Small-Pox.—This remarkable exhibit of the progress of the variola in the colder months last past, in London, is here published as valuable for future reference. Over seventeen weeks elapsed without the occurrence of a single fatal case in the vast population of the city proper.

DEATHS FROM SMALL-POX IN LONDON AND ITS OUTER RING, OCTOBER, 1875, TO MARCH, 1876.

	Area in Acres, including Tidal Water and Foreshore.	Estimated population mid 1876.	Oct. 3, 1875, to Apr. 1, 1876.	4 weeks to Oct. 30th.	4 weeks to Nov. 27th.	5 weeks to Jan. 1st.	4 weeks to Jan. 29th.	4 weeks to Feb. 26th.	5 weeks to Apr. 1st.
Greater London (Metropolitan and City Police Districts)....	446,494	4,286,607	8	..	..	..	1	3	4
Inner, or Registration London.....	78,080	3,489,428	7	..	..	..	..	3	4
Outer Ring	368,414	797,179	1	..	..	..	1	..	..

——Poisoning by Illuminating Gas.—A servant girl, occupying a small room, so "turned off the gas," on going to bed, as to allow a large volume to escape into her room. In the morning she was found asphyxiated, unconscious and nearly pulseless. Recovery in about four hours

took place, under treatment by fresh air and spirits of ammonia, fifteen drops every ten minutes being given at first.—Dr. R. Dexter, in *Journal of Nervous and Mental Diseases* for July.

——Urticaria.—As an external application, Prof. Hardy recommends a lotion containing chloroform and oil of sweet almonds, one-quarter of the former, three-quarters of the latter. Alkaline remedies are given internally at the same time; if these fail, they are to be followed by arsenic.—*L'Union Médicale.*

——The Double-Curved Forceps.—The credit of originating the modern midwifery forceps with the double, or pelvic, curve is commonly assigned to Levret, *circa* 1747, or Smellie, 1751; the probability being that each, independently of the other, developed the same modification of the straight forceps. It now appears that Benjamin Pugh, of Chelmsford, in Essex, made and used a double-curved instrument as early as 1740; his published account of it appeared in 1754.—Dr. A. H. McClintock, in *Dublin Journal of Medical Science.*

——A Brooklyn Invention, in the way of a new form of waste-pipe trap, is mentioned and illustrated in the *Sanitarian* for July, in a report on the requisites of wholesome plumbing. It is a device of a practical plumber of this city, Mr. John Foley, and unlike the ordinary S or half-S traps, may be relied upon as perfectly safe against the exhaustion of its water-seal. This form of trap, as well as all others, requires to be ventilated in order to be protected against the escape of sewer-gas by the process of absorption and transmission through water long standing in the trap.

——The Reduction of High Temperature.—The treatment of the symptom, *fever*, is foremost now in the consideration of clinical students, both surgical and medical. Dr. G. H. Gray, of Meriden, Conn., finds in gelseminum, or yellow jessamine, an unrivaled apyretic; it is efficient in small doses, and free from danger "if used intelligently."—*Medical Record.*

——Pharmacopœial Reform.—The full report of the remarks of Dr. E. R. Squibb on a change of plan proposed for the better management of the pharmacopœial interests of the profession appears in the *New Remedies* for August. These remarks were addressed to the American Medical Association, in view of the approaching decennial revision of the Pharmacopœia.

——The Magee Case.—In November last, the London *Lancet* opened a sharp editorial fire on the lunatic asylums of this country. It sought to show that the "restraint" system was cruelly and unnecessarily

employed, especially in establishments for the treatment of the insane poor. Dr. Bucknill, the eminent English alienist, who had been on a visit to this country, then wrote a series of letters offering a lame kind of apology for his American friends. These letters did not at all satisfy the journal, and in its issue of July 8 it returns to the attack. It brings up the testimony of Mr. Magee against the management of the King's Co. Asylum, with all its *dashed* interlocutories—which dashes imply profanity or brutality on the part of the asylum's servants. This institution, with the Government Asylum at Washington, and another at Tewksbury, Mass., are brought before the English reader to show the extent to which violent measures are carried in the American treatment, and the liberty given to "keepers" to employ the straight-jacket, and even to punish the insane under their charge, which the journal regards as but the natural outgrowth and concomitant of the restraint system.

——KINGS COUNTY LUNATIC ASYLUM, during the year ending July 31st, 1876. The accompanying data appear in the Annual Report of Dr. Blanchard, Medical Superintendent of the Lunatic Asylum :

	Males.	*Females.*	*Total.*
Patients in Asylum August 1st, 1875	305	461	766
Patients admitted during the year	154	160	314
Whole number under treatment	459	621	1,080
Discharged recovered	66	49	115
Discharged improved	22	34	56
Died	27	35	62
Whole number discharged	136	134	270
Remaining July 31st, 1876	323	87	410
Whole number of employees	32	48	80

Of the 314 persons admitted 33 became insane through intemperance; 20 hereditary; 18 overwork; 10 business reverses; 17 domestic troubles; 5 loss of friends; 6 disappointment in love; 18 religious excitement; 3 fright; 3 lead poisoning; 20 old age, and the rest from miscellaneous causes not named.

There was no death by homicide or suicide in the year. Another Asylum building is required.

——"THE SILLY MEDICINE" is the name given to *hyoscyamine* by the paients in the West Riding Lunatic Asylum, the reason being that a full dose, as a grain and a half, tones down a vociferous, violent and destructive maniac in a very short time to a state of helplessness resembling imbecility. Such is the account given of it by Dr. Lawson of the Asylum named. He has used it in sthenic forms of mania, where the physique is not worn down by prolonged excitement, "especially in the aggressive outbursts which characterize life in a refractory ward, and

in the treatment of chronic monomania of suspicion." A single dose commonly produces profound sleep, followed by a marked mitigation of the violent symptoms. The drug used by him is that manufactured by Mirk.

——The Board of Health of the city of Boston (see Fourth Annual Report, 1876, p. 23) complains that "any physician" needs some qualification when the statute makes it possible for the health officer to be offered a certificate like the following: "This certifies that a beby boy died on the *born*day of Febberiy, 1876. Cause of death, *Born.*"

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or such causes of death as "Cancrum," "Canker and Spasms," "Lack of vetallity," "Lack of villality," "Daeth borne," "Canker humer," "Swallowing," "Lung diess," "Canther of the bowels," "Scharletena," "Chituses."

——Homœopathic Tinctures.—In the seventh volume of the Clinical Society, Dr. George Johnson brings to notice a series of cases showing the toxic influence of the homœopathic concentrated solution of camphor. The symptoms ranged from epileptiform convulsions and violent pain in head and back to stupor, nausea and a variety of unpleasant sensations; in one case recovery did not take place until after eight months. The solution is seven times the strength of the spt. camphor of the P. B. Other of the tinctures freely sold at the homœopathic supply stores have been chemically examined, and it has been found that not a few of the so-called "mother tinctures" are poisonous in comparatively small doses.

——Brooklyn Sea-Side Home for children has been located at Coney Island, near the P. P. and C. I. R. R. terminus, under the management of the Children's Aid Society, Mr. R. D. Douglass being in charge. The capacity of the building allows of sixty inmates, children and mothers, at one time. During July nearly 300 persons came and went, and experienced its benefits. Both food and lodging have been provided. It is not easy to compute the amount of good that this undertaking may accomplish.

——The making of Doctors.—Germany, with a population of 42,000,000, last year graduated 660 physicians, rejecting 180 applicants. In the same time the United States, with a population of 40,000,000, graduated 3,000 physicians and remorselessly turned them loose on the community. It is possible that at this rate the supply may equal the demand.

——Quinine Solvent.—One ounce of the spiritus etheris dulcis will dissolve about two drachms of quinine, giving a transparent solution. This agreeable success is claimed by Dr. Isaac Smith, Jr., of New York. Our own experiments have thus far succeeded in making a clear solution of only four grains to the drachm.

——A short time since, a circular addressed to each member of the Society was issued, asking for the small subscription price of the Proceedings from those who sympathized with the enterprise. A prompt reply was elicited from about one-half of the members. This was very encouraging to the Council, who have labored hard to support this publication in the midst of the hard times, when advertisers have been loth to incur additional expense. If there are any others who may be inclined to add their names and their dollar to the subscription list, or if any of those who signed a promise to pay, will communicate directly with the Treasurer, and thus save the commissions of a collector, a receipt will be promptly returned.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. Corey, B. A. Segur, S. G. Armor, J. S. Prout.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, OCTOBER 7, 1876.

AN ANTEVERSION PESSARY.

BY H. FEARN, M.D.

I present for your consideration a pessary for anteversion of the uterus, but which will, in my estimation, be found equally valuable for anteflexion, as also for the support of a cystocele.

Previous to describing the one I now use, permit me to say that in the early part of February, 1867, I was called on to treat a case of anteflexion of the uterus of long standing, and which at the time was so flexed that it presented the shape of a Roman capital U. It had become impacted, one side of the fundus pressing the bladder against the os pubis, the other side resting closely on the cervix uteri, and causing a symptom I have not seen noticed in the book as being a part of the symptomatology of anteflexion, viz., intense, overwhelming numb faintness, so as to make the patient think herself dying. It is not like the weak, faltering pulse of ordinary syncope, but is slower than an ordinary pulse, yet soft and moderately full, and is not relieved by stimulants to any appreciable extent; for I have

given half a pint of whisky or brandy in a very short space of time with no decided relief until the impaction of the flexed uterus was removed by raising the fundus above the pubis, when after a short time the symptoms would gradually pass off, but some decided relief would be expressed immediately. To prevent this impaction I resorted to a variety of pessaries. The double concave perforated disc was tried. This was better than nothing, but did not afford much relief. I then perforated this disc so as to admit the notched ends of a Hodge open lever pessary, but with indifferent success.

Finally, one day in conversation with Dr., then Mr., Leonard, connected at present with the firm of Shepard & Dudley, I told him if I could only unite the open lever with a closed lever pessary so as to have the bar of the open lever part lean anteriorly towards the pubis without reaching it, and the closed bar acting as a pivotal support for the other, I would have just what I wanted.

He told me to bend, by the heat of an alcohol lamp, the ends of the horse-shoe pessary, filing down to a pivotal size and making corresponding holes in and springing the pivots into the holes in the closed bar part, at an angle to suit me.

On trial I found this answered my purpose, and for several years I used it. When in the store, several years after, I was shown a pessary, the principle of which was exactly the same, and I was told it was Thomas'. Of course he was entitled to the name, for I had not published my experience.

In the meantime, however, I had thought out and had in use a modification of the closed bar pessary, which, in my opinion, is an improvement on the one just described, and accomplishes the same result better in some cases.

For where I have failed with the Thomas pessary, for reasons I will show hereafter, I have succeeded with the one I am about to describe and exhibit.

The pessary which I wish to describe is a Hodge closed bar pessary, or one of its modifications. It is bent so as to be almost a V in shape, instead of a straightened S. The longer, or posterior part, extending almost as far forward of the upper and curved bar as the bottom of the V is from that part.

The angle at which this is bent is the most important feature of the pessary, for I have found a very slight variation either upward or downward renders the pessary useless for the object intended. I found that where the angle was a little too obtuse the os uteri would get in front of

the pessary, and of course it would fail to elevate the fundus uteri from the bladder. On the other hand, if it be bent too much it will become inverted and thus useless.

The angle given to the anterior part of the Thomas pessary is the same as the angle of the upper portion of this pessary. I found out, since I commenced to write this article, by placing the two pessaries together, that they are of the same inclination.

The trouble I have found with the Thomas pessary is, the portion designed to elevate the fundus uteri is too long, and instead of elevating it from the bladder, itself presses against the bladder and pubis. Besides it falls too far over—it should be more at a right angle compared with its base.

The first one I made, which I have described previously, was different from Thomas' to that extent—I mean it did not press so far forward and downward.

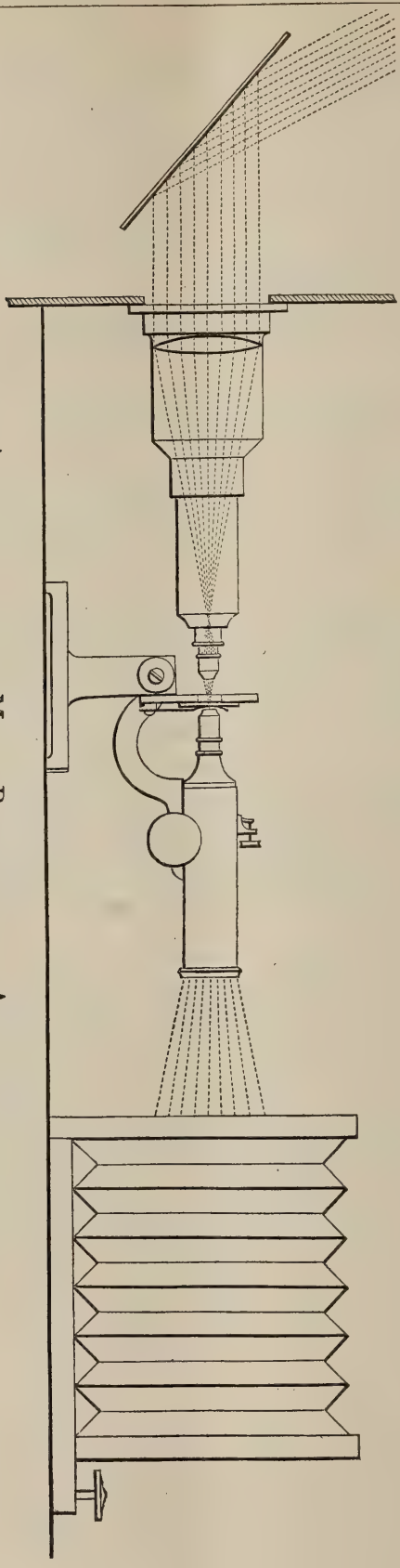
It will be seen, therefore, that I consider the anterior or essential part of Thomas' pessary too long to accomplish the object had in view.

The one that I am now using is, in my opinion, free from this defect, and besides is more easily introduced and is in one piece. I have used both kinds repeatedly, and do not hesitate to give my very decided preference to the modification of Hodge it is my object to describe.

I think if the part on which it is designed the fundus uteri shall rest were a little flattened and broader, it would be a slight improvement. I imagine nothing more would be desired in an anteversion or anteflexion pessary as thus modified.

I have several cases in which I am using this pessary at the present time with perfect satisfaction and without the slightest inconvenience.

In order to introduce it, pass the hollow of the short end of the V under the os pubis a little obliquely, and then after this is passed push it backward till the long end is sufficiently within the vagina to have the upper portion elevate the fundus uteri to its proper position. If pushed too far in, complaint will be made of pain in the back from pressure.



ARRANGEMENT OF MICRO-PHOTOGRAPHIC APPARATUS.

MICRO-PHOTOGRAPHY.

BY C. JEWETT, M.D.

A micro-photograph is made by first projecting an image of the object in a manner very similar to that of ordinary solar microscope projections, and then photographing the image. The process is best conducted in a dark room, though this is by no means indispensable. By means of a plane mirror, a beam of sunlight is thrown horizontally into the room through an opening of two or three inches' diameter made in the window shutter. The mirror is so mounted upon the outside of the shutter as to be adjustable from within for the purpose of controlling the direction of the beam. As the mirror requires frequent re-adjustment, a heliostat, which throws the solar pencil in a constant direction, will save much time and annoyance.*

Equally good results, however, may be obtained with a mirror adjustable by hand. The light remains centered sufficiently long for the exposure, which rarely exceeds ten or fifteen seconds, and for moderate amplifications, in less than a single second.

The beam is now rendered monochromatic by passing through a cell containing a solution of ammonia-sulphate of copper.†

With a saturated solution of the ammonio-sulphate one-eighth inch in thickness, I obtain a light that shows almost no appreciable color below the blue, when examined with the spectroscope. It is obvious that an image formed with this light must be practically coincident in position with the chemical image. The ammonio-sulphate cell is mounted upon the inside surface of the shutter. The monochromatic pencil is now condensed by means of a lens of from two to three inches' diameter, and a focal length of about ten inches. I have used for this purpose a crossed lens (*i. e.*, a double convex lens of convexities for ordinary glass, as one to six) having a diameter of two and three-fourths inches, and a focal length of ten inches. I have tried a meniscus, a plano-convex lens and an achromatic combination from the back of a portrait tube, with nearly indifferent results.

* An instrument of this sort, suitable for the purpose, may be obtained from Mr. E. L. Pratt, of 65 Henry Street, at a cost of from $10 to $15.

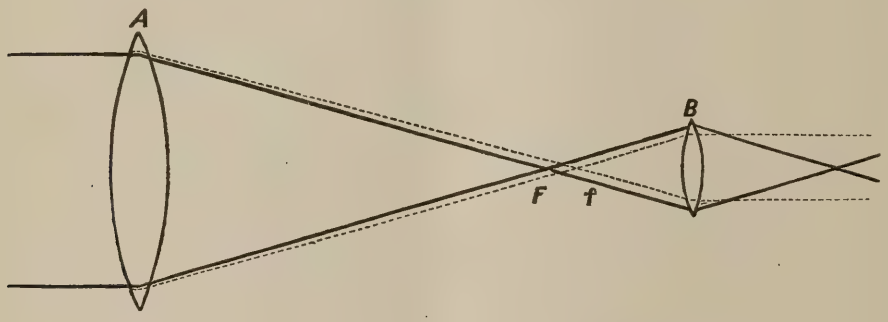
†Prepared by dissolving sulphate of copper in strong aqua ammoniae and filtering.

The use of this condenser was introduced by Dr. J. J. Woodward, of the Army Medical Museum at Washington, to obviate the diffraction and interference phenomena in case of tissue preparations and certain other objects. The interposition of a ground glass, as formerly practiced, though it prevents diffraction, greatly diminishes contrast, and hence impairs the brilliancy of the picture.

The stand of the microscope, with its body horizontal, is now placed in position. It should have an achromatic condenser mounted as usual beneath the stage. The stand should be so adjusted that the achromatic condenser will fall a little beyond the focus of the large lens. The low power objectives will be found good substitutes for the achromatic condenser proper. A convenient plan of mounting the objective used for this purpose is shown in the figure. The objective is screwed into the end of a tube which also serves as a mounting for the large condenser and the ammonio-sulphate cell. The tube should have a telescopic joint to admit of adjusting the condensers at the proper interval.

By placing the achromatic condenser beyond the focus of the large lens, the thermal and luminous foci are separated, or the formation of a heat focus by the second condenser may be altogether prevented. All danger of injuring either object or objective by heat is thus obviated. The ammonio-sulphate cell of course absorbs the greater part of the heat when in place.

The manner in which the foci are separated is shown in the following figure :



The luminous focus of the large condenser, *A*, is at *F*, the thermal focus at *f*. If the distance of the achromatic condenser, *B*, from *f* be equal to its focal length, the heat rays will be rendered parallel after passing *B*. If the achromatic condenser be turned back, the heat rays may even be rendered divergent, while the light is still brought to a perfect focus.

It will generally be found necessary to line the tube of the microscope with black velvet to prevent reflection of light from its sides when the eye-piece is not used. The same object may be accomplished, however, by means of a diaphragm suitably placed in the tube.

The camera, with its front removed, is placed beyond the microscope stand. The operator is now ready to project the image. The ammonio-sulphate cell may be removed and the projection made in white light upon a card-board screen placed at a convenient distance for observing the image. The best position of the achromatic condenser must now be determined by careful experiment. The screw-collar correction for thickness of covering glass may be accomplished by the aid of the image on the card-board. With an eye-piece this correction can be nearly completed by looking down the tube of the microscope, using diffused light, or that of the blue cell. Without the eye-piece the correction is, of course, farther from the point marked "uncovered." The blue cell is now replaced. The exact correction of the screw-collar may be still further tested by standing behind the camera and observing the image upon the glass focusing plate in blue light. The approximate focus is obtained by means of the fine adjustment of the microscope, the final focus by racking the focusing screen back and forth. While adjusting the focus the image should be observed with the aid of a hand magnifier of four or five diameters. The focusing plate is best made by flowing one surface of a piece of plate glass with shellac varnish thinned with dilute alcohol. The coating should make a barely perceptible film. The ordinary ground glass is too coarse for the purpose.

The best results are obtained by using the objective without eye-piece or amplifier, and with the sensitive plate not more than four or five feet from the stage of the microscope.

High amplifications may be made by the use of amplifier or eye-piece, or, without them, by removing the camera to the required distance from the microscope. If the enlargement be accomplished by distance, the fine focusing adjustment of the microscope is controlled by means of a band of thread running over the milled head of the fine adjustment, grooved for the purpose, and also over the end of a wooden rod. This rod extends from the microscope to the camera, and is mounted to rotate upon its axis.

Just before the exposure is made a black cloth is thrown over the microscope stage to prevent diffusion of light through the room.

If a dark room is not available, precisely the same apparatus may be mounted upon a firm table, and the camera connected with the micro-

scope body by means of a blackened tube to exclude all extraneous light from the camera.

For oblique light work the stand may be placed in a position oblique to the luminous pencil, or any of the usual methods of oblique illumination may be employed.

The photographic processes do not differ from those of ordinary photography. Of course the chemistry and manipulations may be varied according to the character of the object and the effects desired.*

Objectives for micro-photography should be of the highest quality obtainable, and should always be corrected for photography. Much vexation will be avoided by not attempting to use objectives that are not suitably corrected.

It has been erroneously supposed that the use of violet light obviates the necessity for special corrections for photography. Dr. Woodward has called attention to this error. An objective corrected as nearly as possible for white light will not give its maximum definition with violet light. The corrections for figure are mainly accomplished by the association of flint and crown glass lenses of opposite curvature. Now such a combination, which perfectly corrects the spherical aberration for rays of given refrangibility, will not do so for all rays of different refrangibilities. This is due to the fact that the upper portion of a flint glass spectrum is more elongated in proportion to the lower than is true of a crown glass spectrum. Hence the ordinary corrections for spherical aberration by white light must be a sort of compromise among the requirements of the different portions of the spectrum, as they are for chromatic aberration. Obviously, therefore, the optician should complete the correction of his objectives for micro-photography under

* I am indebted to the courtesy of Mr. Frank E. Pearsall, of 298 Fulton St., for the following formula for collodion. It gives better results than any other I have used:

Stock Solution No. 1:

Anthony's Snowy Cotton	60 grains.
Pary's Cotton	60 grains.
Alcohol (Atwood's)	10 oz.
Ether (Cooper's)	10 oz.

Stock Solution No. 2:

Iodide of Ammonium	180 grains.
Bromide of Cadmium	50 grains.
Bromide of Potassium	50 grains.
Alcohol (Atwood's)	8 oz.
Ether (Cooper's)	12 oz.

Mix equal parts in small quantities for use.

The silver bath may be neutral or slightly acid.

violet light, as Dr. Woodward has suggested. Objectives so corrected will be found, by white light, to be slightly under-corrected for color.

The ordinary high power immersion objectives of most makers have very nearly the corrections required for photography, especially those of Powell and Lealand, of London, and Tolles, of Boston. I have used an immersion $\frac{1}{25}$th, made by Mr. Wm. Wales, of Fort Lee, N. J., which photographs well, though not specially corrected. By testing the defining power of an objective under violet light, it is possible to determine beforehand whether its corrections are suited to photographic requirements.

In many ways photography lends invaluable aid to the microscopist. In it he has a more exact, more rapid and less expensive method of publishing his discoveries than by hand drawings. By the various mechanical processes of printing, micro-photographs may be multiplied indefinitely for the illustration of printed publications, and that, too, even in the colors of the object, if desirable.

Photography affords the most accurate and expeditious method of micrometry. In illustration of this method I have prepared photographs of blood dried on a stage micrometer, several of which I present with this paper.

As the scale was photographed at the same time with the blood corpuscles, the negative itself shows the magnifying power used. The photographs were made under two different amplifications, very nearly one thousand and two thousand diameters, respectively. The objective used was a $\frac{1}{25}$th immersion, by Wales. The enlargement was obtained without eye-piece or amplifier, by distance alone. The scale was ruled in ten thousandths of an inch. The measurements in this method are made upon the negative, as the paper prints are subject to distortion. Corrections must be allowed for error in the scale, if any. Negatives for this purpose require to be as sharp as possible, and free from diffraction fringes. It is interesting to note, in this connection, that the average measurements of human blood corpuscles and those of the dog and the guinea pig, as determined by Dr. Woodward's photographs, are practically identical. Other animals will doubtless be added to this list by future researches.

Within certain limits photography is a valuable means of making comparative tests of microscopic objectives. Flatness of field,* penetration and resolving power may be shown in a photograph in a form that

*Flatness of field must be tested with the eye-piece in case of objectives corrected for table use, since they are purposely over-corrected, and the eye-piece proportionately under-corrected for curvature of field.

does not admit of dispute. The defining power of an objective not specially corrected for photography cannot, of course, be properly tested by this method.

In conclusion, I may say that micro-photography is available to any one familiar with microscopic manipulations, and possessed of a good table instrument and accessories. No special apparatus is required except such as may be constructed by the operator himself, or obtained otherwise at slight cost.

At some future time I hope to present photographs illustrating the comparative merits of microscopic objectives by different makers.

The following list comprises some of the more valuable papers that have been published upon micro-photography :

Dr. J. J. Woodward's circular on Photography of Histological Preparations by Sunlight. 1871.

Application of Photography to Micrometry. Dr. J. J. Woodward, *Monthly Microscopical Journal* (London). September, 1876.

A paper by Dr. J. J. Woodward in *American Journal of Science and Arts*, Vol. XLII.

Practical Applications of Photography to the Microscope. Prof. O. N. Rood, of Columbia College, same journal, Vol. XXXII.

REMARKS ON THE PHARMACOPŒIA OF THE FUTURE.

BY E. R. SQUIBB, M.D.

Dr. Squibb began by giving a brief history of the origin of the U. S. Pharmacopœia, from which it appeared that it originated in this State, chiefly through the efforts of Dr. Lyman Spalding of the N. Y. County Medical Society in 1817, and first came into actual existence in 1820, chiefly through the efforts of Drs. Thomas T. Hewson, Franklin Bache and George B. Wood, of the College of Physicians of Philadelphia. This College had proposed a U. S. Pharmacopœia as early as 1787, but a Committee, to which the subject was referred, do not appear to have accomplished anything of practical value. The Pharmacopœia of 1820 was the authorized work of a convention which met in Washington, the first of a series of decennial conventions which have met for the purpose

of revising the Pharmacopœia ever since that time, namely, in 1830, 1840, 1850, 1860 and 1870. And a similar convention is provided for, to meet in 1880.

After the revision of 1830 the U. S. Dispensatory was published as a commentary upon, and an explanation of the Pharmacopœia, the whole text of the Pharmacopœia being given in the Dispensatory, and the Dispensatory being a private enterprise of its authors, Drs. Wood and Bache. From that time the Pharmacopœia became a mere skeleton or outline of the materia medica, and was of so little use without the Dispensatory —while this latter embraced its text with very much other valuable matter—that it had no sale or demand, while the Dispensatory based upon it became one of the most successful medical books ever published. So completely did it overshadow and in effect suppress the Pharmacopœia that, until within the last ten years, very few in either the medical or pharmaceutical professions knew of its existence separate from the Dispensatory, and even to-day a large majority of both professions, if asked for the Pharmacopœia, will hand out "Wood and Bache." In this way the authors of the Dispensatory, who for a long time did nearly all the work involved in the Pharmacopœia, were well paid for their labor in the profits of their book, while the true value of the Pharmacopœia, as well as of the Dispensatory, accrued from their ability and their trustworthy labor. At the last revision of the Pharmacopœia, however, Dr. Bache was dead, and Dr. Wood no longer in health and activity, so that the work had to fall into other hands, and was not so well done as formerly. But this was not all. The Pharmacopœia was still kept upon its outline or skeleton plan, while now without a Dispensatory to explain it and make it useful, for the Dispensatory was not, as before, revised with the Pharmacopœia, and so did not then and does not now embrace it; and worse yet, it still does embrace the old effete Pharmacopœia, and gives it, and not the new revision, the currency of its enormous sale and influence. Hence the U. S. Pharmacopœia of 1870 now for the first time stands alone and with the influence of the Dispensatory not for, but against it, while still maintaining its skeleton condition of subordinate value and utility to the professions whose standard and guide it should be, and who desire that it should be true to them that they may be true to it.

These circumstances suggest to the medical profession of the United States the inquiry as to what will become of the Pharmacopœia and the materia medica of the country without the Dispensatory, in the future? Next, is the present plan, which has worked so well since 1820, suffi-

cient for the present wants of the profession, and if so can it be carried out with the same success in the future as in the past without the men who designed and carried out the plan? for these, namely, Wood, Bache, Carson and Proctor, are no longer available for the work. Next, can a plan be suggested which will offer a reasonable chance of improvement, both in plan and results?

The plan which has been suggested by Dr. Squibb, and which is now before the American Medical Association for deliberation, and for decisive action at its next meeting, is briefly as follows. This plan should, if possible, be considered well by the whole medical and pharmaceutical professions of the country within this next year, so that the delegates from the whole nation may go to their national Associations in June and September next prepared to act wisely, deliberately and with proper caution on so important a matter.

The proposition is that the American Medical Association, as being the only organization which represents the medical profession of the nation, take charge and control of the Pharmacopœia as one of its most important interests, and establish a permanent Council for its entire management. That this Council should consist of five members and be formed as follows: The American Medical Association, through its nominating Committee, should annually elect the President of the Council. The Association should next invite the Surgeon-General of the Army and the Surgeon-General of the Navy each to detail a proper officer from each medical corps to be members of the Council; and finally, should invite the American Pharmaceutical Association to appoint two members. This Council should make a general revision of the Pharmacopœia at least once in five years, and put it in such form as to be practically useful and sufficient without a commentary or explanatory work, and should issue annually a fasciculus, or small volume, embracing the progress of the materia medica, and any useful information thereupon, of the previous year. In order to do this work well the Council should be directed to employ the necessary expert knowledge and skill—say two editors for the general revisions, and one editor to be permanently employed under the direction of the President of the Council. This Council and their editors should be such men as from knowledge or natural taste might train themselves, in a very few years, to this special work—for its ultimate success would depend entirely upon the way in which it was done. Hence men of soundness, ability, accuracy and energy would be required, and the labor would be great in proportion to the accuracy and precision of the work. The Council would have to meet

for a few days three or four times a year to compare and harmonize their individual work, and to revise the work of the President and editors. Such an organization would require men whose time is valuable, and such time and such labor as would be indispensable even to a moderate degree of success and utility to the professions of medicine and pharmacy could not be had without being well paid for. To pay liberally for such services might at first be impossible, but the sale of the copyright of the books would doubtless defray the absolute expenses even from the first publication. But after this, just in proportion as the books should supply the needs of the professions would the copyright bring funds to the treasury, so that, if well managed, it would, in ten years, or perhaps sooner, pay liberally for all the labor and special training of the highest quality that could be bestowed upon the work. Thus it is proposed to make it self-supporting from the first, while the quality of the work is to be depended upon for the degree of success obtained, in the full confidence that if the work be sound and true to the two professions it will be abundantly sustained.

In reply to questions by members, Dr. Squibb stated that he could not tell whether there would be opposition or resistance to his plan from the present Decennial Organization, from which confusion, or possibly two Pharmacopœias, might be made, but that he supposed there would not be. And, in regard to the copyright, stated that it was always held by the Chairman of the Committee of Final Revision, and had always been sold to or given to one publisher, namely, Messrs. J. B. Lippincott & Co., of Philadelphia. And that when he, Dr. Squibb, served upon this Committee in 1860, the Committee had sought for information from the publishers in regard to the copyright, which the Committee, as representing the Convention, owned, and had been refused by the publishers, on the ground that the information asked was their private business. Other equally respectable publishing houses having applied for permission to compete for the copyright, a resolution was offered in the Committee to offer the copyright to competition between three or more publishers, but the resolution was voted down, and the copyright was again given or sold to the firm which had refused to give any information in regard to its cost or value.

Dr. Hopkins asked whether, in case the American Medical Association should assume the control, it would not have to be called the American Pharmacopœia, rather than the U. S. Pharmacopœia, as there were representatives in the Association from outside the United States?

Dr. Squibb answered that that was an open question, to be decided by

the Association. It was probable, however, that it had better remain strictly a National standard, and as such could only be called as at present.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The November meeting will be held on the 21st, at which time there will be presented the following papers:

The latest investigations into the Genesis of Tubercle, by Dr. N. B. Sizer.

The relations of Albuminuria to Pregnancy, by Dr. W. H. Martin.

Caustic Arrows, their place in Surgery, by Dr. J. C. Hutchison.

EDITORIAL NOTES.

——Atropia in Mushroom Poisoning.—Dr. T. L. Brunton states (*Brit. Med. Journal*, Nov. 14, '74), that one of the most perfect instances of antagonism is the power of atropia to counteract the poisonous principle of mushrooms. This principle, which has been named *muscarin*, seems to be the same or nearly the same in the different species of mushrooms. Among the symptoms of mushroom poisoning are a tendency to syncope, and intense dyspnœa. The merest trace of muscarin dropped in dilute solution upon the heart of a frog will arrest its pulsations almost instantaneously. A minute quantity of atropia brought in contact with the heart will restore the pulsations thus arrested, even after a period of no less than four hours. Muscarin does not stop the heart of mammals so readily as that of the frog, but it reduces the frequency of the pulse, and intermissions are sometimes noticed in cases of poisoning by mushrooms. The action of atropia is, however, as prompt in counteracting the effect of muscarin in case of mammals as in that of the frog.

The dyspnœa of muscarin poisoning Dr. B. has shown by his experiments upon animals to be dependent upon spasmodic contraction of the pulmonary vessels and accumulation of blood in the right side of the

heart. Dyspnœa may be occasioned, of course, by preventing the blood from reaching the air, as well as by preventing air from reaching the blood. This, too, as well as the other symptoms of muscarin poisoning, disappears in animals almost immediately after the hypodermic injection of atropia.

Schmiedeberg and Koppe describe an experiment in which the use of this antidote during the death struggle completely restored a dog which had been poisoned by muscarin. It is therefore recommended that in case of poisoning by mushrooms the stomach be evacuated, and atropia injected hypodermically.

The dose for this purpose should be about one-hundredth of a grain, repeated if necessary until the dyspnœa is relieved.

——"ALLOPATHY," SO-CALLED.—An intelligent writer to a highly respectable English medical journal makes the great mistake of speaking of "allopathy" as the practice of regularly educated physicians. This is a badge which should not be worn for a moment. It is a nickname, the invention of Hahnemann, based on a false conception or misrepresentation of what honorable medicine is; it was never a true descriptive term, and is less so now than ever before. It should be repudiated, in season and out of season, by all who consider themselves *physicians;* no such adjective is necessary.

——THE SECRET OF ITINERANT PILE DOCTORS of Illinois and other Western States is made known in the *Chicago Med. Journal,* October. These itinerants claim to cure piles by a new method, and without operation, and without necessitating withdrawal from business. The secret has been sold to various physicians and others for sums varying from fifty to twelve hundred dollars.

The method is said to be by the hypodermic syringe (in perfect order) injecting a solution of carbolic acid crystals in pure oil, three parts former, one of latter; four to six drops being sufficient for a single pile. The uppermost is chosen for the first injection, and allowing a little time to elapse, another pile is attacked. Although claimed to be painless, the treatment sometimes occasions excessive pain. The writer of the disclosure, Prof. E. Andrews, considers the dangers attendant upon such intravenous injections too serious to warrant their use at the present time by honest surgeons. He expects that physicians will be called upon to treat dangerous hepatic disease, coming on in consequence of this kind of pile-driving, and asks that facts of that nature be made known in the medical press.

——Dr. Ulric Palmedo, for nearly thirty years a member of this Society, died September 25th, in the sixty-sixth year of his age. He graduated from the University of Goettingen in 1830. His fatal malady was Bright's disease, with complications. Dr. Palmedo was about the first European physician to reside permanently in this city.

——Dr. Gabriel Disosway Ayres died October 19th, aged 51 years. He was born in New York; a graduate of the Albany Medical College in 1853; soon after came to Brooklyn, and became associated in practice with his elder brother, Dr. Daniel Ayres. His death from pneumonia, like that of several others we hear of, was measurably due to the hazards of a Centennial visit.

——Dr. Joseph Schwab, an esteemed and worthy practitioner of the Eastern District of this city, died September 4th, after a prolonged term of suffering from diabetes, ending with carbuncle. This gentleman was a native of Bavaria, born at Gruenstadt in 1806; a student at the universities of Heidelberg and Munich; a graduate in medicine at the latter in 1832; served in the Polish army in 1830—1; came to this country in 1852, and to this city in 1857. He was last winter a vaccinating officer of the Board of Health. In the section where he lived he won the name of a man of unusual merit and probity.

——The International Congress at Philadelphia, in September, forms a most interesting and important episode in our medical history. A more distinguished gathering never met in this country, and the work accomplished was worthy of the occasion. New York State was second to none in its contributions; the only ones from our immediate neighborhood being two by Dr. Squibb; subjects, a universal pharmacology and metrical system of measures.

——The American Public Health Association held its fourth convention at Boston, on the three days beginning October 3d, and had a very successful reunion. Dr. Rauch, of Chicago, was chosen President. Drs. Bell and Segur attended from this city.

——Nasal Bougies.—Something new has been brought forward which is likely to be good for "that remarkable American instrument"—the catarrh—which Mr. Dickens said he learned to play so well. Dr. G. Catti, assistant to Professor Schroetter's Clinic at Vienna, presents (*Allg. Wein. Med. Zeit.*) a favorable experience with medicated gelatine bougies so made that they can be applied to the nasal cavities. The gelatine used for this purpose is that obtained from the bones of calves;

it is soft, elastic, and liquefies in nares in from one to three hours. The bougies are eight to ten centimeters long, four to six millimeters in diameter; they are made staff-shaped, somewhat pointed at one end. They should be introduced into the nose horizontally, gradually, and with a rotatory motion; they may be passed entirely within the cavity of the nose. Astringents or detergents, such as alum, rhatany, sulphate copper and carbolic acid are the drugs commonly used to medicate these bougies. [Sulphate of zinc is not thus added, for the reason that Störk's experiments go to show this drug is destructive to the sense of smell when introduced in solution into the nose]. The forms of disease which Dr. Catti has treated in this way have been chronic catarrh and ozœna. In a certain proportion of cases of obstinate catarrh his success has been brilliant—cases in which the insufflation of powders and the nasal douche had been tried without any decided advantage.

It is not impossible that Helmholtz' remedy for "hay-fever"—quinia—may be satisfactorily applied by means of bougies; in the form of solution it is commonly too painful to be regularly employed.

A collection of these bougies sent to the Berlin Surgical Congress was examined with no little approbation.

——A Hospital Surgeon in 1776.—Long Island was occupied but a few months by the American forces; but during that time it appears that a military hospital was located there, probably within the lines of defense and within our city's limits. Dr. Billings' historical paper in *Hays' Journal, October*, tells us who its surgeon was—Dr. William Currie, of Pennsylvania. He was a learned man, and one of the pioneer authors in medicine of the latter part of the past century. He had been educated for the church. He published numerous pamphlets and articles on yellow fever; in 1792 a book on the climate and diseases of the United States; in 1811 another similar volume, and in 1817 assisted in editing Thomas' Practice.

——Yellow Fever in Georgia.—The physicians of New York have been engaged in devising a plan of medical relief for yellow fever sufferers at the South. The matter has been placed in the hands of a Committee—Drs. Metcalfe, Harris and Day.

——Punch on the Anti-Vivisectors.—The comic press is coming to the aid of the doctors in England on the vivisection question. The *British Medical Journal* says: "Punch's whole-page cartoon this week is entitled 'Stupidity and Ignorance: Meeting of Medical Professors. Operating Professor: 'By this experiment we have ascertained that we

can alleviate the sufferings of thousands of our fellow creatures. I may further add—' Policeman (interrupting): 'No you mayn't. We have had enough of this sort o' thing. You must move on!' Professor: 'Move on? We can't move on if you interfere.' The four figures at the table are portraits of Jenner, Paget, Henry Thompson and Ernest Hart."

ANNUAL DUES.

TREASURER'S NOTICE.

The Treasurer asks the attention of the members of the Society (to the number of 102), who have not paid their Annual Dues, to the necessity of prompt payment of the small amount of $2. The bills have been placed in the hands of Mr. George Duncan, for collection.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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Vice-President.....J. S. PROUT, M. D.
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A. Mathewson, M. D., (Senior Censor), 17 Clinton St., J. H. H. Burge, M. D.,
G. W. Baker, M. D., R. M. Buell, M. D., Chas. Jewett, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK,

(1874 to 1878.)

Drs. J. S. Prout, B. A. Segur, S. G. Armor,
Drs. R. M. Wyckoff, W. H. Thayer,
Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. H. L. Bartlett, B. A. Segur, W. F. Sanford, C. Jewett, F. H. Stuart.

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Drs. C. H. Giberson, W. E. Griffiths,
Drs. W. G. Russell, N. Matson, F. W. Rockwell.
Drs. R. M. Buell, W. F. Sanford,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. Corey, B. A. Segur, S. G. Armor, J. S. Prout.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, NOVEMBER 21, 1876.

THE RELATIONS OF ALBUMINURIA TO PREGNANCY.

BY W. H. MARTIN, M.D.

The title of this paper to be accurate should be less comprehensive; as it is my purpose merely to relate a case in illustration of the following propositions:

I. That pregnancy in its earliest stages may induce albuminuria.*

II. That, inasmuch as this effect is apparent long before the uterus is sufficiently enlarged to interfere, by its size, with the renal circulation, the influence of pregnancy in producing albuminuria must be vital and not mechanical.

III. That in some cases the death of the ovum, even before its removal from the uterus, will relieve uræmic symptoms that had previously been severe and progressive.

In October, 1871, Mrs. ——, of this city, was attacked, at the end of the eighth month of her third pregnancy, with uræmic convulsions. She was delivered of a living child by the late Dr. H. S. Smith, and, although for a time in an apparently desperate condition, made a perfect

*The term albuminuria is used to indicate a general pathological condition, one of whose symptoms is the appearance of albumen in the urine.

recovery. The albuminuria had been recognized early (*how* early, I regret I am unable to say,) and had been treated by Dr. Smith with his usual prompt thoroughness. In *five* weeks from the delivery the doctor's notes report the urine normal and the lady perfectly well.

In April, 1873—having passed a single period only—Mrs. —— consulted Dr. Smith for relief from distressing headache, disturbances of vision, nausea, etc. The doctor, discovering albumen in the urine (I find no reference to casts) applied the usual remedies without benefit, and as he refused to interfere further at this early period, she in her desperation, as she says, went to some quack in New York city, who—according to her own very intelligent, and, I think, reliable account—introduced a stiff sound into the uterus once every week for seven successive weeks. The first application was attended with slight hemorrhage, and followed by a watery flow which lasted some hours. The other applications had no result of any kind, except the seventh, which was followed by violent hemorrhage, and the next day she was delivered of what Dr. Smith considered a three-months' fœtus. Mrs. —— assures me (and Dr. Smith corroborated her statement) that after the *first* application of the sound, the symptoms, which had been so severe as to urge her to the dangerous expedient of consulting a quack, disappeared, so that for the five weeks previous to her delivery she felt almost well. Albumen and casts had disappeared from her urine the first time that Dr. Smith examined it after her recovery.

She remained perfectly well and perfectly regular until May, 1875, when she missed a period. Albumen appeared in the urine and she suffered from headache and nausea to such an extent that Dr. Smith, after consultation, resorted to the use of the sound, and in June, relieved her of what he pronounced to be a *two*-months' ovum. Although she had severe flooding she recovered thoroughly and rapidly. The examination of the urine, in which Dr. Smith was assisted by Dr. Segur, showed a perfect restoration to the normal at the end of three weeks.

Mrs. —— continued well and menstruated regularly up to the 24th of May, 1876. She missed in June, and during July was feeling very badly. By the first of September she presented the following symptoms: severe and persistent headache, frontal and occipital; muscæ volitantes and bright flashes interfered with vision, and the outline of objects seemed so indistinct that she could read but few minutes at a time. There were present also: insomnia, total anorexia, almost constant nausea, and a general nervous irritability which made her absolutely wretched. I thought I could detect a slight puffiness of the lower eyelid and fullness behind the ankle-joint, but if œdema did exist it was very slight. She was passing large quantities of urine of a sp. gr. of 1010.

Dr. Segur examined it for me on the 18th, and found albumen over one-eighth, and numerous granular and hyaline casts; no blood globules. Her symptoms grew worse in spite of treatment, and she begged earnestly for relief. On the 22d, in consultation with Dr. E. S. Dunster, Professor of Obstetrics, etc., in the University of Michigan, it was determined that interference was necessary. On the 25th I introduced a flexible sound to the fundus, a depth of three and one-half inches; a little watery fluid tinged with blood followed the sound on its withdrawal. No other result ensuing, the sound was used again on the 27th and on the 29th. On the first of October, a small carbolized sponge tent was introduced into the cervix and allowed to remain twenty-four hours. On the fifth of October—nine days after the first introduction of the sound—Dr. Segur examined the urine carefully and was surprised to find but one granular and comparatively few hyaline casts. Heat and nitric acid produced a very light cloud of albumen which settled at the bottom of the test tube into too small a compass to be measured. The urine was passed less frequently and less copiously, sp. gr. 1013. Mrs. —— had almost no headache after the 26th, was out every day, and called herself well. All this time there was no discharge from the vagina, and no pain, and it was not until the 15th of October, twenty-one days after the first introduction of the sound, that the uterus attempted to expel its contents. On the evening of the 15th hemorrhage commenced, and continued so profusely that, after applying a tampon with persulphate of iron, I called Dr. Skene to my assistance; and on the next morning he removed the contents of the uterus with the curette. The ovum escaped detection, although looked for with great care. The sac which contained it was examined by Dr. Segur, who found everything normal except that the villi of the chorion were less prominent than usual, the attached surface appearing to the naked eye almost smooth; there was no fatty degeneration. Mrs. —— had a rapid and uninterrupted recovery. Just two weeks after having been for hours in a condition such that the slightest movement produced syncope, she went to the Centennial Exhibition at Philadelphia, where she remained some days. She told me upon her return that she had "seen everything, had walked miles every day and was perfectly well." There was certainly nothing in her appearance to contradict the last part of her assertion. Her urine—examined on the 25th, *ten* days after the womb had been emptied—showed no trace of albumen, and Dr. Segur was able to discover only a few hyaline casts. Examined again on the 21st of this month, the report is no albumen and no casts.

My comments upon this case will be confined to its bearing upon the three propositions already stated.

I. That pregnancy was the sole cause of albuminuria in this case seems to me to be indisputable. Mrs. —— is certainly not the subject of Bright's disease. Examination of the urinary deposits fails to give evidence of either inflammatory changes or of fatty degeneration of the kidney. Her general condition—one of perfect health as far as can be discovered—would seem to indicate that her kidneys must be rarely perfect in structure to have successfully resisted the *four* separate invitations to disease by which they have been visited. Mrs. —— is almost reckless in exposing herself to wet and cold, and often alternates weeks of sedentary occupation with days of excessive and fatiguing exercise. And yet there have been no variations in her history from the strict level of health, except during her pregnancies. She has told me that the only sickness she has had since childhood was an attack of bronchitis. Again, it may be worth while to note that, if what the books tell us be true, namely, that latent Bright's disease predisposes its pregnant victims to abort, she should have evidenced a tendency to abortion, instead of offering such extreme resistance to its induction. The albuminuria began with each pregnancy and ceased with its arrest. The only question, therefore, that could be raised, is as to the existence of some other cause coincident and concurrent with pregnancy, and yet independent of it. This question I will dismiss by saying that the existence of such a cause, if not impossible, is certainly incapable of proof.

It may then be fairly inferred from this case that pregnancy, before it has advanced two months, can and does produce albuminuria.

II. The *fact* of causation being proved, the question as to the *mode* of causation must be met. Why and how does the presence in the uterus for less than two months, of a fertilized ovum, alter the function and structure of the kidney to such an extent as to determine the appearance in the urine of albumen and casts? (The development of so-called uræmic symptoms, as it depends upon alteration of the kidney function, however produced, opens a different question, which has been successfully investigated, and need not detain us.) In studying the way in which pregnancy produces albuminuria, we are compelled to leave the open field of fact and proof, and to enter the misty region of theory and inference. In the first place, recorded observations as to the earliest period at which albuminuria has been detected, are very few ; moreover, the belief that it does not appear until the pressure of the enlarged uterus upon the venous circulation affords an apparently easy explanation, is so general, that I have looked almost in vain for assistance from authorities on obstetrics. I find little evidence that the occurrence of albuminuria before the fourth month of pregnancy has ever been recognized except as a result of original pre-existing disease of the kidney. And yet, while

these writers speak of the pressure of the uterus as the most *obvious* solution of the phenomena of albuminuria, some of them refuse to accept it as the only and inevitable explanation; and refer, for the most part vaguely, to the possible existence of other causes as potent as pressure.

Dr. Tyler Smith, speaking of cases occurring as early as the fourth or fifth month, is "inclined to think" the albuminuria due to "sympathetic irritation of the kidney by the gravid uterus, of the same kind as that excited in the salivary glands, the mammæ, thyroid, etc."

Dr. Fordyce Barker says that, "while there is probably much truth in the present theory, it does not contain the whole truth, and it does not even include all of the mechanical causes." But he pursues the subject no farther. He relates a case, however, in which albuminuria was apparently (he thinks undoubtedly) produced in the last month of pregnancy by exposure to cold; was relieved by treatment before delivery, and re-appeared *during* delivery, excited, as he says, by the parturient act. This case is interesting in this connection only in that it shows that the albuminuria was relieved without the removal of the pressure. Other writers on obstetrics have entered more fully, if not more satisfactorily, into this subject, but it would little profit us to examine their theories, especially as most of them are applicable only to the later months of pregnancy.

By going outside of the range of obstetrical literature, we ought to gain information suited to our purpose. But although material is abundant it is not to us easily available, and for this reason, that, independent of specific kidney lesion, the diseases which are now known to be attended by albuminuria are so numerous, and pathologically so distinct, that we are puzzled in the endeavor to make analogy and comparison useful in testing the causative influence of pregnancy. It is hard to believe, for instance, that the conditions under which albuminuria is produced by valvular diseases of the heart on one hand, and by diphtheria on the other, are identical, or even similar. That scarlatinal poison and that pregnancy both cause albuminuria is proved; but that both cause it by originating exactly the same kind of disturbance eludes demonstration. It is rather a "begging of the question" to assert that each produces changes in the blood, and that it is useless to seek beyond these wholly indeterminable changes for a mode of causation. It is easier to suppose that each disease, or each group of diseases (if they can be grouped ætiologically or otherwise) has a peculiar power, and exerts it in a peculiar way, than it is to suppose the existence of some one essential condition to which all equally give rise, *i. e.*, one single and immediate cause of albuminuria. Let us then leave an unprofitable line of investigation, and, discarding all arguments based on analogy, try to discover what

there is in pregnancy by itself which excites the kidney to the production of albuminuria.

When an ovum is fertilized a profound impression must be made upon the nervous centres which preside over the processes of nutrition. The rapid and complex growth of the fœtus; the establishment of a new vascular system (as it may be termed) for its support; the remarkable development of the uterus to make it serve as a suitable home for its growing infancy, and an efficient means of expulsion at its maturity, demand large applications of nutritive force. The medium through which these impulses are transformed into actions is the great sympathetic nerve. The first steps toward any change of nutrition are accomplished by the agency of the vaso-motor nerves. The blood being ready to furnish material, the capillary circulation must be made ready to take it up. And this condition of excitation must be maintained by the action of the sympathetic nerves during the whole time that an extra supply is needed. Now anatomists tell us that the uterus is supplied with organic nerves from the spermatic plexus; they tell us also that the spermatic plexus is derived chiefly from the renal plexus. With this close anatomical relation is there not also a close physiological and pathological association? The impulse sent forth by the common nerve centre over one set of nerves to one organ may sometimes (be sufficiently intense to) react and send a similar impulse through another set of nerves to another closely related organ. A sort of internal reflex action may in this way be propagated from the uterus to the kidney.

Dr. Dalton, in his physiology, divides the reflex actions in which the great sympathetic is concerned, into three kinds. The third kind he describes as "reflex actions taking place through the system from one part of the internal organs to another." Under this heading he says: "The mutual action of the digestive, urinary and internal generative organs upon each other takes place entirely through the medium of the sympathetic ganglia and their nerves. The variations of the capillary circulation in different abdominal viscera, corresponding with the state of activity or repose of their associated organs, are to be referred to a similar nervous influence."

The uterus and the kidney are certainly "associated organs;" and it is, therefore, at least probable, that an influence derived from the unusual nutritive activity in the uterus may be reflected from the nervous centre through the renal nerves; and being continuous, may stimulate or alter the interstitial circulation of the kidney in such a way as to produce albuminuria. This explanation, I am convinced, is nearer the truth than any other with which I am acquainted. The idea that pregnancy might produce changes in nutrition, and so affect the kidney, is

not new, but I have never seen it stated exactly as I have given it. The theory is simple, and involves no more of obscurity than all theories must which depend on reflex action. It is also general in its application. . Perhaps it may not account for every theory as completely as it seems to do for mine, and yet I cannot now recall any observed condition belonging to the albuminuria of pregnancy which it would fail to explain. I am at least willing to accept it as a reasonable explanation of the mode in which pregnancy produces albuminuria.

III. The consideration of the third proposition need not detain us long. The history of the case I have detailed presents the following testimony: In two different pregnancies uræmic symptoms, which had been severe, disappeared almost immediately after the use of measures to destroy the ovum. In both cases there was an interval (in one of five weeks, in the other of twenty-one days,) between the operation and the removal of the contents of the uterus; and yet the signs of albuminuria diminished as rapidly *during* this interval as they did after it. It seems evident, therefore, that the albuminuria depended upon the *life* of the ovum, not upon its mere presence, and certainly not upon the size of the uterus. The meaning of this is plain when viewed in the light of the theory of causation that I have advanced. While the ovum is alive various active processes are at work, the influence of which upon the kidney I have attempted to indicate. As soon as the ovum dies the increased activity of nutrition demanded for its growth is no longer needed; and, as nature is rarely wasteful of her powers, the nerve impulse to activity is no longer given. When direct action ceases, reflex action, which is born of it, must cease also; and the albuminuria ends with the process by which it was excited. For these reasons, then, I find it easy to believe that the death of the ovum puts an end to the albuminuria.

In conclusion, I would say that this subject deserves closer examination than it has received. And if the investigations of more competent observers establish principles to supplant my crude suggestions, I shall be happy if my case started the inquiry, even though it be no longer an illustration of the propositions I have attempted to defend.

——The Discussion of Dr. Martin's paper was opened by Dr. Skene, who said that the case therein reported was, so far as he could recollect, a unique one, and goes very far to prove the truth of a proposition which has for a long time been suspected, but not hitherto demonstrated. For a considerable length of time after the relations of pregnancy to albuminuria had been recognized, it was customary to assign as the sole cause the *mechanical* theory, namely, pressure by the gravid uterus. After a time *vital* or reflex action was assigned as another and added influence.

And now we have the proposition that in a certain proportion of cases, at least, the sole agency is *vital* and non-mechanical. That pressure cannot be the only cause of albuminuria we may justly infer from the comparative infrequency of that complication caused by large uterine fibroids, ovarian tumors and the like, which must exert even greater pressure than the gravid uterus. The kidneys do not, in all probability, undergo an extreme pressure, on account of their position near and protection by the spinal column. These and other considerations that might be mentioned go to make up a strong argument against the mechanical theory. Others have reasoned in this way; among them Dr. Barnes, of London, touched upon the subject in his paper on Some of the Relations of Pregnancy to General Pathology, read in New York last September.

It is the habit in all hospitals to examine the urine of lying-in patients, but as they generally come in during the later months of pregnancy, there remains yet to be studied the relations of pregnancy in the early months to albuminuria. I think it will be found to occur more early than is now generally supposed. When we reflect on what serious and various complications of pregnancy are produced through reflex action, there is no inherent difficulty in the theory advanced by Dr. Martin.

It is manifestly important to have correct views as to the causation of this affection, for if we believe it is due to pressure we can do little; but if it is vital or reflex in origin we can do much, and can hope for far greater success than hitherto. The great value and novelty of this case of Dr. M.'s is in this, that it shows conclusively that albuminuria has existed in the early months of pregnancy; that the irritating element having been removed, the albuminuria disappeared also, and did not recur until the patient was again pregnant.

——Dr. De Long called attention to the presence of the obscure neuralgic pains of pregnancy, as in the ends of the fingers, loins, etc. In two cases of wives of physicians these pains co-existed with albuminuria, which had not been suspected, by reason of the absence of other symptoms, but which had been detected upon examination.

——Dr. Garrigues referred to a case of neuralgic pains in fingers in a pregnant woman, who was not albuminuric.

——Dr. Mathewson has found that retinal degeneration, consequent upon Bright's disease, may exist without the urine showing the presence of albumen, although renal casts may be present in great variety.

——Dr. Squibb observed that diabetes frequently occurs temporarily in conditions not recognized as departures from the normal line of health. In like manner albuminuria occurs temporarily, comes and goes, without essential derangement of the health, under the influence of causes temporarily acting. This fact seems to indicate that some in-

quiry is necessary into relations of this form of albuminuria, not recognized as abnormal, before attributing too much to that form which complicates utero-gestation.

——Dr. De Bows remarked that albuminuria is normally present after the excessive ingestion of food.

——Dr. Segur offered one suggestion, that the urine of all patients be examined in the early months of pregnancy, who had in previous confinements had albuminuria, convulsions or nervous derangements, and the results reported to the Society. This line of inquiry will enable us to settle some part of this vexed question.

EDITORIAL NOTES.

——Operating-day at the Kings County Hospital is Thursday, at 3.30 P. M. The profession is welcome to attend.

——Yellow Fever, in Georgia, was declared to be at an end by the Medical Society and the City Council of Savannah on Nov. 15th.

——The first step is about to be taken by the King and Queen's College of Dublin toward the authorization of women to practice medicine. The College has determined to admit a woman to the license. Other licensing bodies are expected to follow the example of the Dublin College, although the majority of the professional journals of Great Britain regard the movement with disfavor.

——Prout.—Dr. J. S. Prout sailed for Europe on the 11th ult., to be absent for twelve months or more. During his absence Dr. Mathewson will perform his duties as Lecturer on Diseases of the Eye at the L. I. College Hospital.

——The Chronological List of three pages, published in the present number, represents the additions to the membership of the Society since the last issue of the Manual.

——Small-pox again threatens London, and the *Lancet* speaks of the "delayed epidemic," for the reason that the epidemic now developing was due last year. A three-year interval commonly marks the period of remission, and it is now four years since the great epidemic of 1870–2 closed. This retardation is accounted for on the large increase in vaccination secured in 1871.

——Steel Measuring Tapes have hitherto come to us from Sheffield, England; they are now made in this city by G. M. Eddy & Co. The

ribbon of steel is 3/8 inch wide, and coils compactly in a circular case that can be carried in the pocket. It is marked off in inches and centimetres.

——The Nitrite of Amyl has been tried in *chorea* and *intermittent fever*. In three cases of chorea, in school-girls, inhalations of three to six drops were ordered three times daily, during two weeks, at the end of which time the convulsions had been arrested. In intermittent fever amyl has aborted the chill, but only shortens the later stages; it may be given even after the algid stage has fairly set in. Some bold exhibitions have been tried, even to the extent of thirty drops, with good rather than bad effects, in this form of fever. The ordinary dose has been six drops. —*Dublin Journal.*

——Nocturnal Incontinence of urine in a lad of twelve years has been cured by operation, Mr. W. F. Teevan, of London, being the surgeon. A contraction of the meatus externus was present in this case, and believed to be the cause of the trouble. It was divided, and a bougie of size No. 12, English, passed every other day to maintain the increased calibre. During six weeks there was occasional incontinence, after which relief was permanent. These obstinate cases will hereafter suggest the propriety of surgical inspection.—*Practitioner.*

——Subcutaneous Alimentation.—The hypodermic syringe has been used to convey foods into the body in cases where the stomach and rectum rejected them—in gastric ulcer and in suicidal mania. The articles that have been thus injected are milk, extract of beef, olive and cod-liver oils. Sometimes the milk injections caused small abscesses, while cod oil did not, and was painless. The longest time that life has been supported by this means alone is said to have been twenty days. A recent number of the *Virginia Med. Monthly* speaks of Valentine's meat-juice as especially suitable for the hypodermic sustenance of patients having gastric ulcer.

——Weekly Record of Prevailing Diseases.—The State Board of Health of Michigan has, through its enterprising Secretary, Dr. Henry B. Baker, developed a plan for the approximate registration of the diseases of that State. Dr. Baker has prepared for distribution among those members of the profession of that State who engage to fill them for the use of the Board, weekly blank forms on postal cards, for the recording of the prevalent diseases, not deaths merely, of their several localities. It is expected that a sufficient number of correspondents will volunteer to aid this work, so that an approximate statement of the health of all districts of the State may be known at some central office. By this means more timely information will be received concerning the rise and pro-

gress of epidemic and other diseases, and nearly all diseases will be better understood when they come to be investigated on this broader scale than is at present practicable. The results of this scheme are not expected to possess all the value of an exact and statistical report; well-considered estimates are all that are at present sought. A blank book is given to the physicians making reports, in which they are expected to keep copies of the reports sent to the central office. Other material for the assistance of these corresponding members is prepared. Not much is asked of them, and therefore more will be gained in the end. This has been found to be the case in Massachusetts, where this volunteer plan was first set in motion in the spring of 1875, and where was first demonstrated the entire willingness of the medical fraternity to co-operate for the furtherance of disease registry. This line of inquiry and public record is felt to be of great importance to the profession, and is destined to be of practical advantage to the Government itself. It is not unworthy of comparison with the popular and profitable operations of the Signal Bureau. In the words of Lyon Playfair, "the registration of deaths represents the wrecks which strew the shore, while that of sickness would tell us of the coming storms, and enable us to trim our vessels to meet them. Till we have such a system of disease registration, public health cannot be administered with full intelligence."

——Quinia as an Antipyretic.—Liebermeister has employed large doses of quinia in over 1,500 cases of typhoid fever, besides hundreds of other cases marked by high febrile action—as pneumonia, pleurisy, rheumatism, etc. The number of single doses, varying from 20 to 45 grains, is estimated to amount to not less than 10,000, and he considers that in not a single case has any evil effect followed this robust use of quinia.

——The Glyconine Emulsion of Cod-liver Oil, first made public by Mr. G. C. Close, of this city, in the *Druggists' Circular* of October, 1874, is again commended by that journal as probably equal to the best method of administering cod oil. His formula is: "Cod-liver oil, four ounces; glyconine, nine drachms; aromatic spirit of ammonia, one drachm; Sherry wine or brandy, sixteen drachms; dilute phosphoric acid, four drachms; essence of bitter almonds, two drachms." Glyconine is made by adding five parts in weight of concentrated glycerine with four parts of yolks of eggs, previously well beaten.

——The Diet Kitchen mentioned in our March number is doing a good work, and is worthy the more intimate acquaintance of physicians. Medicines and professional advice the poor can get without much difficulty, but proper diet is ordinarily quite beyond their reach, and oftentimes the whole cure hinges on this one item of proper food. The kitchen is located at 49 High Street.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 368 Fulton Street.

The December meeting will be held on the 19th, at which time there will be presented the following papers:

The use of Salicine in Chronic Diarrhœa, by Dr. J. B. Mattison.

Notes on Cases of Traumatic Coccygodynia, by Dr. F. W. Rockwell.

Caustic Arrows—their place in Surgery, by Dr. J. C. Hutchison.

The Dilutions of Milk in Artificial Feeding, by Dr. J. Walker.

At this meeting Nominations will be made for Officers of the Society for 1877.

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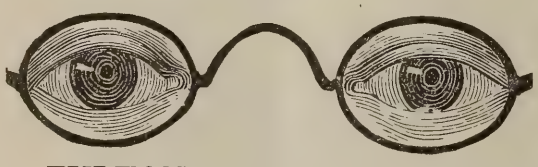

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, DECEMBER 19, 1876.

NOTES ON CASES OF TRAUMATIC COCCYGODYNIA.

BY F. W. ROCKWELL, M.D.

The disease which forms the subject of these notes was first described by Dr. Nott, of New York, under the name of Neuralgia of the Coccyx.

He removed the two terminal sections of the bone, which had been injured by a fall, and completely relieved his patient.

This operation, performed in 1844, although it attracted the attention of the profession at the time, seems to have fallen into complete disuse until revived and systematized by Sir James Simpson in 1861, who gave to the disease a name derived from its prominent symptom, and placed it permanently upon the list of recognizable maladies.

So little has been written on the subject in our text-books or reported in our current literature, that I may be pardoned if I glance hurriedly over the opinions of the few authors who have given it any special consideration.

ETIOLOGY.—Simpson himself believed that in almost every instance injury to the bone—such as fracture, dislocation or pressure during parturition, violence inflicted by falls, blows, etc., was the prime factor in the causation of the disease, and in this opinion he is closely followed by

most recent writers, with the exception of Prof. J. G. Thomas, who thinks it "very generally a neuralgic state due to uterine or ovarian disease."

Speaking of the coccygeal nerves, Prof. Erb, of Heidelberg, says (Ziemssen Cycl. Prac. Med., Vol. XI., p. 187): "Whether they can be the seat of a true neuralgia appears still to be doubtful, though a certain number of the cases described by Simpson are probably of a neuralgic character."

Of its extreme comparative frequency among females, who are exposed to all of the causes enumerated above, there can be no doubt, though occasionally found in the opposite sex. Neither is it confined to adult life, two cases having been reported by Herschelman in children from four to five years of age.

Pathological Anatomy.—Inflammation of the fibrous structures investing the part, or entering into its relations with the sacrum and ischium, seems to be the most commonly accepted lesion. This may be due to injury or to the influence of cold on persons of rheumatic diathesis.

Simpson's first reported case was of this nature, occurring in a woman who had been exposed to its influence while pursuing her avocation as a washerwoman, and necessitating the partial extirpation of the bone for its relief.

Once set up, this inflammation may result in any of the pathological changes incident to its appearance in cartilaginous structures; and we accordingly have different observers reporting cases varying in type from the slightest noticeable lesion, through all the shades of inflammatory change, to complete destruction of the bone itself. Scanzoni found the coccyx very long in a number of cases, unusually movable, or deflected to one side. He also reports cases of inflammation, even suppuration, in the vicinity of the bone. (Schroeder, Ziemssen, Vol. X., p. 560.)

Symptoms.—The sole symptom of the disease is the pain which is developed upon motion of the part either by muscular action or pressure, and which varies in intensity from a dull ache to the most exquisite agony. Sometimes pressure over the posterior surface of the bone will elicit it, while it may be touched from the rectum without any discomfort whatever. In other cases the sufferer can only obtain relief when sitting down, by supporting the weight of the body upon one buttock; while in others, stooping, walking, defecation, micturition, or any act which calls the gluteal or perineal muscles into play may cause a paroxysm.

A careful physical examination is often necessary to differentiate this

disease from others having the same symptom of pain localized in the vicinity of the coccyx, such as fissure or ulcer of the rectum, painful hæmmorrhoids, etc.; but in most cases the aggravation of pain produced by pressure or passive movement of the bone will serve to make the diagnosis. Simpson and Thomas lay considerable stress upon the difficulty which the patient finds in rising from or sitting down upon a low seat.

Treatment.—All authorities agree as to the obstinacy of the disease, and its intractability to any but the most radical treatment, especially in cases having a traumatic origin. Simpson expressed the opinion that permanent relief rarely followed anything but operative treatment, and was accustomed to isolate the bone from its attachments by subcutaneous incision. This is not by any means a simple operation and even in his skillful hands often proved unsuccessful. Thomas recommends as an improvement on this plan the exposure of the bone by incision, the last steps of the operation being completed by the scissors, cutting from below upward, and severing all the attachments between the coccyx and muscles or ligaments inserted therein. Should *this* fail, removal of the bone is the only resource left us. In the cases reported below the simpler procedure was not resorted to, since the symptoms seemed to point to destructive changes in the tissues of the part, and the patients insisted upon certain and permanent relief.

The first case is that of Mrs. K., whom I saw with Dr. E. S. Bunker, under whose care she had been for several months. About two years previous to this time, while descending some steep steps into the yard —her arms being filled with something she was carrying—she slipped and fell, striking the sacrum against a sharp edge of the stair.

She experienced acute pain, but managed to crawl into the house after a little while, and in a few days resumed her usual duties. Gradually, however, the pain returned, and finally became intolerable. At times, even when sitting upon soft cushions, ease could only be obtained by resting upon one hip.

Defecation, walking and stooping were all extremely painful, and she was at times compelled to neglect her household duties while trying to obtain ease by perfect rest. The doctor had exhausted routine treatment, opiates, tonics, subcutaneous injections, etc., but had only succeeded in mitigating her sufferings. Upon examination per rectum, an exquisitively sensitive spot was found near the base of the coccyx, the patient screaming out when this was touched, even with the greatest care. The coccyx was neither more nor less movable than usual, and pressure made in the direction of its long axis did not seem to increase the pain. Believing the disease to be in the fibrous structures about the

bone, its extirpation was advised and eagerly assented to by the patient.

She was anæsthetized, and an incision about 2½ inches long made over the bone. It was then detached from the soft parts covering it, bent sharply forward and disarticulated from the sacrum, where, without much difficulty, it was dissected away from the rectum and removed.

An ulceration extending through the entire thickness of the periosteum was found upon its anterior surface, in the location which had been so sensitive to pressure. The diameter of the ulcer was about three or four lines. The bone and its articular surfaces were all apparently healthy.

The next day the patient complained of some pain in the wound, but said "the old pain was all gone."

Owing to an accident, the wound, which had healed throughout its whole length, was re-opened on the fourth day, and suppuration ensued. The cavity was washed out for a few days with a weak solution of carbolic acid, and the patient rapidly recovered.

The operation was performed in Jan., 1875, and the patient has had no return of her pain.

Case II.—In the following spring I was consulted by Mr. F., who had heard of the case just mentioned, and came to see me in regard to similar symptoms which he had been suffering from.

His history was a most interesting one. About a year before, while descending the companion-way of a vessel, he fell, striking the brass plate of the step, and suffering acute pain referable to the sacral region.

As the steamer was then in port, a physician was called in, who treated him for "Spinal Irritation."

After a few weeks he resumed his duties, but was again prostrated by the pain, and again treated by counter-irritation, sedatives, etc. He again improved and began to hope himself well, when, early in September, while sweeping out his state-room, he was seized with violent pain and trembling, and compelled to lie down in his berth. Arriving at Chicago, he was taken to a hotel, medical advice was called, and he was cupped and blistered over the sacrum, and given phosphoric acid and strychnia for spinal irritation. After a month's treatment, as he was growing steadily worse, he changed his physician. His new attendant agreed with the diagnosis which had been made, but changed the treatment to one of the salts of zinc. After five months' confinement to bed he returned to his home in the northern part of this State, and was treated by his physician through correspondence until June, when he came to Brooklyn. I saw him just after his arrival, pale, emaciated and excessively nervous. Judging from his history that a local injury was the

cause of his trouble, I examined him per rectum and discovered an extremely movable coccyx, which upon firm pressure caused acute pain of the same character as that from which he had been suffering.

Suspecting an ununited fracture with disease of the bone or cartilage, I suggested the propriety of an operation for its removal.

The following day he was seen by Prof. Armor, who assented to the diagnosis and treatment.

The operation was performed on the 5th, the bone being readily disarticulated and removed. Rather free hemorrhage occurred from the sacral artery, which, owing to its retraction into the fibrous tissue in which it lay, was, with some difficulty, secured with a ligature. The bone having been removed, the oozing, which was rather free, was allowed to subside, and the wound closed with silk ligatures.

On examining the coccyx, it was found that the cartilages between its first and second pieces were softened and inflamed, and upon sawing it open longitudinally the bone itself was found in the same condition, the pulpy detritus being easily scraped away with the finger nail.

The following morning the patient expressed himself as feeling better than he had in a year, and in a week or two was able to ride about and walk moderate distances.

Aug. 10.—A letter from him at Martha's Vineyard, written in fine spirits, though suffering at times from a nervous disorder, which he has had for years.

He is now living upon a farm, and but for the occasional return of his nervous trouble would be a well man.

Case III.—Last April Lizzie C., a tall, spare blonde, entered St. John's Hospital for relief from a "neuralgic trouble," which had become so severe as to interfere with her occupation of seamstress. Eight months previous, when suddenly rising from a stooping posture, she struck the lower part of her spine against the sharp corner of a chair. Severe pain followed the injury and in a few months became almost constant. Efforts requiring any exertion of strength in a stooping position, rising from a chair after sitting a little while, straining at stool, etc., were sure to be followed by exacerbations of suffering, which finally led her to seek medical advice. The usual remedies gave no relief, and she entered the hospital. On examination I found the coccyx very movable, projecting forward, and so sensitive to pressure that a touch served to elicit groans from the patient. A week or two was given to general treatment while the patient was passing through her menstrual epoch. She was then seen by Drs. Hopkins and Freeman, who agreed with me as to the propriety of an operation.

The patient was anæsthetized and the usual incision made. On ex-

posing the posterior surface, the seat of motion was found to be at the point of articulation with the sacrum, the bone having been violently separated from it at the time of injury. The subsequent inflammation must have been somewhat severe, as the posterior surface of the bowel was found adherent to the concavity of the coccyx, necessitating a rather careful dissection to free the bone. One vessel was ligatured, the wound closed with horse-hair sutures and dressed with carbolized oil.

Erosions were found upon the articulating surfaces of the bone removed, though the sacral ones were normal.

Ligature came away on the ninth day.

The patient made an excellent and rapid recovery, and has remained perfectly well since.

MAISONNEUVE'S CAUSTIC ARROWS—THEIR PLACE IN SURGERY.

BY J. C. HUTCHISON, M.D.

Maisonneuve's Arrows is Canquoin's paste of chloride of zinc made into the form of arrows of various shapes for convenience in using. The composition is as follows:

Chloride of zinc	1 part.
Wheat flour	3 parts.
Water	q. s.

They are formed by rolling this paste into cakes, which are then to be divided into strips of any desirable shape or size; then by drying they may be made to assume any desired degree of firmness or tenacity.

Maisonneuve uses the arrows in three forms: 1st. *Conical*, for circular cauterization; 2d. *Lance-shaped*, for cauterization in parallel lines; 3d. *Spindle-shaped*, for central cauterization. The conical arrows, which I here show, were prepared for me by Dr. Squibb nine years ago, from samples obtained from Maisonneuve himself. I used them a few days ago, and found them just as efficient as when they were first made.

Manner of introducing them.—The arrows, instead of being applied to the surface and destroying the tumor from without inwards, are introduced into the body of the tissue, so as to effect the destruction from *within outwards*. If the tissues are soft the arrows will penetrate them; if not, a passage must be made with a scalpel. This can usually be done without loss of blood if the arrow fills the wound completely, un-

less an artery of considerable size is wounded, as was done in a case in which I recently removed the mammary gland by this method, necessitating the use of acupressure to arrest the bleeding.

1. *Circular Cauterization* is specially applicable to tumors which project above the surface, as in tumors of the breast and the like. The arrows are introduced around the tumors at the distance of one-third to one-half inch from one another, and the tumor is effectually destroyed in one hour, or two at most. By this method very little of the healthy tissue is destroyed, scarcely any blood is lost, and there is very little reaction.

2. *Cauterization in parallel lines.*—In this method the caustic is introduced in parallel lines, so as to divide the substance to be destroyed into thin laminæ, which yield promptly to the destructive properties of the agent. This method has been found most useful in tumors that are deep-seated, as in the neck, the rectum, the uterus, etc.

3. *Central Cauterization.*—In this method an opening is made with a scalpel carried through the middle of the tumor, and the arrows are pressed into this until they are completely buried in the tissues. This method is less energetic than either of the others, but can be employed where it would be impossible to use them, as in certain interstitial tumors of the uterus, and in superficial tumors where we wish to preserve the skin as nearly intact as possible, as in the ganglia of the neck, and also in destroying tumors of the tongue and of the tonsils.

With regard to the theory of *Interstitial Cauterization,* Maisonneuve says:

"It would no doubt surprise many surgeons to see foreign bodies thrust to the depth of eight or ten centimetres into living tissues, and they may ask why it is that these caustic arrows, whose irritating qualities are so great, do not produce any of those terrible consequences that follow in wounds caused by cutting instruments, especially if any foreign substance remain in the tissue.

Any theory that may be advanced to account for such a result must be based on physiological principles as yet very obscure.

A foreign body, as a nail, lacerates the tissues through which it passes along its whole extent; blood and lymph ooze from their vessels, and soon, from contact with the foreign body or with air, all these parts lose their vitality; then decomposition begins, they become changed into putrid liquids, which penetrate the tissues and become the cause of serious disturbance, of phlegmonous inflammation, of gangrene, etc.

When, on the contrary, the foreign body is a caustic arrow, we see the same destruction as in the preceding case, but there is the important difference that all the tissues destined to decay by the action of the caustic agent are immediately rendered imputrescible, and are, as it were, embalmed. Again the caustic substance causes in the vessels that it touches a direct coagulation of the liquids, which it prevents from flowing and infiltrating the tissues; and still farther, the living tissues themselves, which are exposed to the action of the caustic, are destroyed to the depth of several millimetres, but at the same time they become imputrescible, and retain a very intimate connection with the parts that still remain healthy. These are thus protected most effectually against all external influences by a dense, impenetrable layer, which they throw off at a later pe..od by a regular and healthy action which lasts generally for nine or ten days; at the e.piration of this time, the encrusting substance is spontaneously thrown off, the wound presents all the characteristics of a healthy surface undergoing the process of reparation. The consequences are easily understood. After an operation with cutting instruments, the surface of the wound is exposed to the contact of external agents. The

blood, the lymph and all the other liquids flow readily; and all these substances, whether solids, liquids or gases, meet with no obstacle to prevent them from irritating the organic fibres and infiltrating their tissues, or even entering the current of the circulation.

Hence the various accidents that are named *traumatic*, such as hemorrhages, phlegmonous swellings, erysipelas, fever, putrid infection, purulent infection.

And when the eschar is removed, the surface beneath is fully protected by an organic layer known by the name of pyogenic layer or membrane, and the patient is preserved from all those accidents that follow operations with cutting instruments."

Advantages of Caustic Arrows.—The chief advantages claimed for cauterization by Maisonneuve, are its power of preventing purulent infection, erysipelas, surgical fever, hemorrhage (it is a powerful hemostatic), and other dangerous contingencies of surgical operations. If we exclude its agency as a hemostatic, can we not obtain all these advantages in operations *where the use of the scalpel is feasible*, by the application to the wound of a solution of chloride of zinc, forty grains to an ounce of water, as recommended by the late Campbell De Morgan, Esq.? Mr. De Morgan first used chloride of zinc in cases of cancer, with the idea that the frequency of the return of the disease after operating was due to the remains of its germs on its cut surface; and he hoped that the application of the chloride of zinc to the wound would destroy any cancer germs that might be scattered over it, and thus diminish the chance of recurrence. Whether the use of chloride of zinc in the manner recommended by Mr. De Morgan diminishes the probability of a recurrence of cancer must still be regarded as *sub judice*. But it should, I think, be used, because it prevents all odor of putrefaction for several days, diminishes the dangers of purulent infection and erysipelas, and lessens inflammatory disturbance. It is especially valuable after the removal of portions of the maxillary bones or of the tongue, when, as every surgeon knows, the discharge is highly offensive for the first few days after such operations. Even Mr. Lister, with all his enthusiasm for carbolic acid, uses De Morgan's solution as a first dressing in many of his operations, which are treated antiseptically by carbolic acid; and relies upon it entirely when the situation of part is such as to make it impossible to use his favorite antiseptic dressing, or when the application must be made once for all at the time of the operation.

Having observed the use of caustic arrows at the Hotel Dieu, Paris, in 1867, I became convinced that the method not only deserved consideration, but was a valuable addition to our surgical expedients. And during the last nine years I have used the zinc arrows in a good many cases of cancerous tumors of the breast, neck, etc. And while I am not prepared to say that it will invariably prevent the accidents arising from traumatic injuries, as claimed by Maisonneuve, I have not seen such contingencies following its use.

Other advantages which I think it possesses are: 1. It is painless after

two or three hours, and patients walk about the room as if nothing had been done, complaining of no discomfort whatever. 2. In addition to its caustic properties, by which the tumor is eradicated, by its antiseptic properties it keeps the parts free from odor and healthy granulations are produced, which completely fill the gap, and leave little or no trace of a cicatrix. 3. But little inflammation is excited in the surrounding tissues, and decomposition in the wound, if it previously existed, is at once arrested; the slough is dry and shows no tendency to putrefy. A considerable advantage is the contractile nature of the wound after its application, which becomes evident even before the slough separates.

The two following cases, selected and condensed from Maisonneuve's Clinique Chirurgicale, Tom. i., Paris, 1862, have been translated for me by my friend, Dr. T. P. Corbally. They illustrate the use of the caustic arrows in two difficult cases, and I use them in preference to any of my own cases, because they are more striking than any I have recorded.

CASE 8.—*Enormous fungus of neck of uterus. Ligature. Arrows repeated twice without the least accident.*

Martin (Augustine), aged 32 years, admitted to La Pitié, 24th June, 1858. For a year past menses very abundant. An enormous growth in the form of mushroom, of which neck of womb forms the pedicle. The top, larger than the fist, distends the vagina. Tissue soft and bleeding. The vagina was not implicated. June 25th. Maisonneuve removed tumor by ligature. As the disease extended to the body of uterus, he determined to use arrows. On July 10th he inserted *six* arrows parallel to one another into the body of the organ. They penetrated to the depth of three centimetres. A tampon of lint was laid over the place of insertion. A little tenderness in abdomen was the only inconvenience. It was removed by poultice. Twice afterwards, on the 8th and 10th of September, the cauterization was repeated to destroy the roots of the disease. Case progressed favorably. Patient still in hospital, so as to allow surgeon to observe the probability of relapse.

CASE 11.—*Cancer, involving the entire half of the tongue on right side. Operation by arrows. Cure.*

Courtois (Jean), aged 69 years. Came to La Pitié, Nov. 11, 1862. Disease extended from tip almost to the epiglottis. Was treated by Ricord, who regarded it as of specific origin. Decided to use arrows, because of their safety and the ease of applying them. Patient in chair; head held by assistant; mouth held open; tongue seized by blunt forceps, and entrusted to assistant. Twelve punctures were made longitudinally and obliquely backwards to the depth of a centimetre. Into each of these an arrow *two* centimetres in length was introduced, until each arrow was completely enveloped by the tissue. The arrows formed four transverse rows. Those dividing diseased from healthy part were placed with the edge down; the others, edges transversely. Care was taken to allow no portion to be exposed, to avoid accident, lest any part might be swallowed, or come in contact with the palate. Neither food nor drink were allowed for two hours after operation.

No swelling in healthy side, nor in the tonsils nor epiglottis on the next day. Diseased part dry and grayish color. Pain lasted about three hours; not very severe; slept well. Complains only of difficulty in speaking.

Deglutition during eight following days but little impeded. The ninth day eschar separated, and was removed without the loss of a drop of blood.

It was interesting to see fully half of the tongue removed, and the other half retaining all its movements and all its functions. On Dec. 10th cicatrization complete. Patient retained till 30th. I have been since assured that cure was complete.

Conclusions.—When you did me the honor, Mr. President, to request

me to bring this subject before the Society, you asked me to consider definitely, "*What place caustic arrows should occupy in practical surgery.*" In answer to this question I respectfully submit the following conclusions:

1. Zinc arrows should be used when the disease—especially malignant disease—cannot be taken away clean by the knife; more particularly if there is a fetid discharge from an open sore, with hemorrhage and pain, which is gradually wearing out the patient's strength, as in uterine and other cancers.

2. If the tumor has more width than thickness, involves the integuments, is ulcerated upon its surface, is situated at the bottom of an old wound, and fixed, as it were, against the bones; if, in a word, it is not possible to remove the disease without causing a considerable loss of integument, then the caustic should be preferred.

3. In those patients who absolutely refuse extirpation by the knife, the use of caustic arrows is admissible; even though the skin is sound and the tumor movable, and can be removed by the scalpel, so as to leave a wound whose edges can be more or less approximated.

4. When erysipelas, pyæmia, septicæmia or puerperal fever are prevalent, especially in hospitals, operations should be done with caustic arrows in preference to the knife, in suitable cases.

5. Cauterization, practiced as here described, is entitled to occupy a prominent place among our surgical resources.

THE VALUE OF SALICIN IN CHRONIC DIARRHŒA.

BY J. B. MATTISON, M.D.

An assertion that the majority of practitioners, during an active professional life, meet with one or more cases of diarrhœa which prove utterly rebellious to ordinary treatment will, I presume, pass unquestioned. After an experience limited to a few years, I had the record of several such instances, and the success, in my hands, attending the use of salicin was so marked and satisfactory, that I was induced to place it before the profession, and, in a paper presented early in 1873, attention was called to its value, and its employment commended to those who were not aware of its virtues in the disease under consideration. Increased experience and the somewhat wide publicity with which my paper was

honored, have resulted in making me the recipient, through sources public and private, of confirmatory testimony so ample as to fully warrant me in again bringing it into notice. And I am the further justified in so doing by the fact that, strange as it may appear, of the various works on Materia Medica and Therapeutics which I have consulted, numbering no less than forty-four, in only two—Aitken's "Practice of Medicine," to which, per Naphey's "Compendium of Modern Therapeutics," my original indebtedness is due, and Bartholow's treatise on Materia Medica and Therapeutics, the latest book and the best—is mention made of its merit in this regard; and of a number of medical gentlemen with whom I have spoken, but one had employed it, and his results, which form the close of my cases, were of a character most gratifying.

Presuming you are all acquainted with the history of willow bark, and the fact that its active principle has long been regarded as somewhat astringent and tonic, but more especially as a substitute for the cinchona alkaloids in periodical diseases, and, of late, as a febrifuge, largely extolled in the treatment of acute rheumatic disorder, I shall, after explaining its *modus operandi* and method of administration, proceed at once to clinical details, sufficient, I think, to convince the most skeptical; and, while not lauding it as a specific, sustain the assertion I am emboldened to make, that in salicin we possess a *remedy without rival* in purely *atonic* chronic diarrhœa.

Regarding the *rationale* of its operation, I think it admits of a fivefold explanation. First, its *tonic* effect as evidenced by its power in improving the appetite and digestion, and the signal success obtained where there is pre-eminent reason for believing the main trouble lies in a *toneless* state of the enteric muco-muscular membrane. Secondly, its *astringent* property, as shown by such promptness of effect in many instances as to admit of explanation on no other hypothesis. Thirdly, as an *antiferment* and *antiseptic*, proven by its destructive power on bacteria and vibrio, and in preventing the reaction of amygdalin and amulsin, and of ptyaline on starch. Fourthly, as an *antiperiodic*, rendered likely by its well-known power in this regard, and presuming the fact, which is certainly fair, that in a proportion of cases not well defined a malarial element, subtle but sure, is a factor of no mean significance in favoring the prolonged intestinal drain. Lastly, as an *alterative*, made probable by the fact of a happy influence exerted in many instances where other well-tried tonics, astringents and antiperiodics have been resorted to in vain.

It can be administered in pill, powder or solution. To adults, preferably the former, in doses of five grs. every four hours. To children under two years, one-half to two grs. mixed with sugar, or in sweetened

water or milk, every fourth hour. In any case where improvement is not noted within a week, increased frequency of administration is recommended, and in *all* cases careful attention to dietetic details and hygienic surroundings is of decided importance.

Aug. 20th, 1870, came under my care F. B., æt. two years. Unwell for several days from profuse diarrhœa. Prescribed what I thought a suitable astringent, without success. Prescription changed with no better effect, and, without details, for more than two months, during which were employed opiates, astringents and stimulants. I failed in accomplishing my object. One remedy would control for a time, then a return profuse as ever, having from five to twenty evacuations in the twenty-four hours. The parents were discouraged. My faith in the virtue of certain medicines began to waver, and a prospective change in professional attendance loomed up before me, when, fortunately for all concerned, I prescribed salicin in half-grain doses, every four hours. The effect was all that could be desired. In *ninety-six hours* decided improvement was apparent; in *ten days* patient dismissed, *cured*.

Mar. 30th, 1872, M. R., æt. twenty months. Diarrhœa for weeks, during which had employed various remedies without effect. At last ordered salicin, one-half grain every fourth hour. After ten grains had been taken patient was much improved, and by the further use of an equal quantity case was discharged, *cured*.

Sept. 10th, 1872, W. H., retired physician, æt. 82. First attacked with diarrhœa in 1857, recurring at intervals until 1862, since when it has been permanent, having from four to seven liquid evacuations daily. Meantime his general health had suffered proportionate to the frequency and copiousness of the discharges from anorexia and debility, his weakness, at times, so marked as to compel remaining indoors for quite a prolonged period. Had employed opium, acetate of lead, alum, catechu, nux vomica and other tonics and astringents with little effect, getting the most decidedly good results from a combination of alum and nutmeg, which produced a decreased frequency of evacuations without much change in consistence. Ordered salicin, pills, two and one-half grains each, two after each meal. In three days their effect was manifest, and the night of the 18th passed without intestinal movement, an event not previously occurring for months. Sept. 21.—Appetite and strength improved. Evacuations less copious, more consistent. Patient declares salicin has produced greater relief than any remedy ever employed. Continue it, and, as flatulence is somewhat troublesome, prescribe: Take of Pepsine (Scheffer's), 1 drachm; Fiat Chart., No. xii. S. one, *ter die*. The salicin was continued nearly six weeks, when evacuations were reduced to two and three, sometimes only one daily; with decided improvement in color and consistence. Meanwhile appetite and strength had increased, and patient's condition was, in every way, much more favorable than when treatment was begun. One month after its suspension his health remained comparatively good, having but two discharges daily, of a character almost normal.

The opportunities in private practice for determining the therapeutical value of any medicinal agent being limited as compared with a large hospital service, and with the object of putting salicin more fully to the test, I recommended it to my friend, Dr. N. Henry Drake, then house-physician to Charity Hospital—now of the Colorado, U. S. N.—who very kindly consented to make use of it in every case of obstinate diarrhœa coming under his observation. After a few weeks he wrote me, giving the history of seven cases, in six of which it proved perfectly successful, some after the failure of various other remedies; and as they furnish such strong corroborative evidence, I desire to present them as concisely as possible.

Case 1.—M. S., æt. 60. Admitted June 10th, 1872. Diarrhœa, *three* months; 10 to 20 evacuations daily; anorexia and marked emaciation. Ordered: Take of tr. opii., tr. camph., tr. capsici., tr. menth., each 1 ounce. M. S. Teaspoonful every four hours.

Continued two weeks, little improvement. Prescribed: Take of pil. plumbi. ext. opii., S., one every fourth hour. Used a long time, failed. Then given: Take of liq. ferri per. nitratis, 2 drachms; tinct. opii, camph., 2 ounces. M. S. Teaspoonful, *ter die.* Continued till Oct. 1st, without success. Oct. 2d ordered: Take of salicin, 1 drachm, div. in chart.; No. 12., S. one every four hours. Oct. 6th, improved; continue treatment. Oct. 10th, very much better. Oct. 15th, case *cured;* treatment suspended. Subsequently, one evacuation daily. Proper color and consistence.

CASE 2.—A. M., æt. 54. Diarrhœa three months. Former treatment, opiates, lead and vegetable astringents. Oct. 1st, salicin, 5 grains every four hours. Continued two weeks. *No improvement.* Then ordered: argent. nit., one-half gr. thrice daily. Nov. 1st, dismissed, *cured.*

CASE 3.—Mary M., æt. 50. Diarrhœa four months. Oct. 15th, placed on salicin, five grs. every four hours. Oct. 18th, improved. Nov. 4th, case *cured.*

CASE 4.—Mary C., æt. 46. Disease six months' duration. Oct. 24th, ordered salicin, same as others. No other treatment. Oct. 31st, case dismissed, *cured.*

CASE 5.—D. S., æt. 30. Diarrhœa three months. Nov. 5th, discharged from hospital, *cured,* after two weeks' use of salicin, alone; 20 grs. per diem.

CASE 6.—Cath. Shea, æt. 93. Diarrhœa *six* months. Salicin treatment instituted Oct. 25th, unimproved for six days. Nov. 4th, three evacuations, nearly normal. Continue treatment. Nov. 21st, case, though a *very* obstinate one, now *cured;* 5 grs. every four hours.

CASE 7.—Ellen B., æt. 40. Diarrhœa two months. Maximum evacuations, twenty daily. Nov. 5th, ordered salicin, dose and interval as others. Unchanged first three days, then improved, and Nov. 18th, dismissed, *cured.*

In the Charleston *Med. Journal,* Jan., 1875, Dr. John S. Hughson, of Sumter, S. C., cited the success attending his use of salicin, and as his cases are reported in a style so felicitous, I crave your patience while I present them in his own language, as follows. After referring to my recommendation of the drug, he remarks:

"All cases coming under my care being easily controlled by usual remedies, the salicin treatment had almost escaped my mind, when, the 1st of last April, I was called on by a gentleman suffering from chronic diarrhœa of nine months' standing. He had, during the first part of the time, been under the care of a physician in an adjoining State, and, not improving, he returned home and placed himself in the charge of a competent physician here. Months passing without any permanent improvement, he became weary and disheartened, and looking on life as a burden and health as a thing to him ever in the future, he called to place himself under my care, with a faint hope for brighter days. I found, upon inquiry, he was having from eight to twelve evacuations during each twenty-four hours, generally watery in their character, but occasionally a little blood and mucus. He told me that all the remedies commonly employed in these cases had been faithfully tried without success. So, feeling that it would be useless to try again what had already failed, I resolved to treat the case with salicin, as recommended by Dr. M., and prescribed: Take of salicin, 2 drachms; syr., q. s. M. Divide into pills. No. 48. S. Two to be taken every four hours, and direct a continuation of sulph. zinc injections that he was already using. On the *third day* he called to report improvement. Continued medicine as before, and in a *month's time* he pronounced himself *entirely well.* The prescription had not been changed from the first day. I saw this gentleman a few days ago, and was told that he has had no symptoms of a return of the disease and feels as well as ever in his life."

"On the 4th of August I was called upon and informed that a lady from a neighboring town, some thirty miles distant, would—if possibly able to travel—arrive on the evening train of the 6th inst., for the purpose of placing herself under my care, and, also, hoping for benefit from a change of air and scene; and I was requested to see her as early as possible after her arrival. Accordingly, on the evening of the 6th, I called at the residence of Mr. ———, and found Mrs. ——— an object pitiable indeed to look upon. From a beautiful, gay and fascinating woman, she had become changed to almost a skeleton, with wan looks, her eyes encircled by dark rings that

gave, in contrast to her otherwise pale features, a truly ghastly appearance. Reclining upon a sofa, with the soft light falling upon her attenuated form, she looked as if grim death had, indeed—as she declared—claimed her for his victim. She told me that for six months past she had been suffering from chronic diarrhœa of a most obstinate nature. Her medical attendant—an accomplished gentleman and physician—during the course of treatment used various remedies without obtaining any permanent benefit. Her bowels acted from twelve to eighteen times during the twenty-four hours, very watery, and occasionally passed a little blood; the tongue clean; no appetite; no tenderness over the bowels and but little pain at any time. Diagnosing this as a case not so much of an inflammatory nature as of a want of tone in the muscles and lining membranes of the bowels, I prescribed salicin in two and one-half gr. pills, two to be taken every four hours, with mild sulph. zinc injections morning and evening. Being despondent, I endeavored to cheer her by anticipation of a happy return in health and strength to the bosom of her family and the caresses of her little ones. On the *fourth day* there was decided improvement, there having been but two or three evacuations during the day and night, and these of a more natural character. At the expiration of a week, without any other medicine—with exception of a few doses of co. tinct. cardamom, for the relief of flatulency—she was able to walk about the house, her bowels acting but once during the twenty-four hours, and that action normal in color and consistency. Ordered the pills now to be taken only four times a day. Health and strength returning. At the expiration of *two weeks* from the time of my first visit, I was able to pronounce the case *cured.*

Last month, desirous of ascertaining whether Dr. H. had any additional evidence to offer, I addressed him a letter which elicited the following:

Mr. A. D. R. was attacked with diarrhœa June 1st, 1875. He placed himself under the care of a competent physician here, who pursued the course of treatment commonly used in those cases, changing from one thing to another without any benefit resulting until the 16th of August, when Mr. R. decided to take a trip North, in hopes that change of air and scene would be of advantage in aiding to restore his much broken health. He remained in Lowell and Worcester, Mass., under medical treatment until about the first of October, when he concluded to come home to die. I saw him October 5th, the morning after his arrival, and his condition was certainly very unpromising, his family thinking there was no prospect for recovery. He was greatly debilitated, barely able to walk from one room to another, being compelled by weakness to occupy a recumbent position the greater part of the time; was extremely emaciated, feet and legs swollen, very little appetite, and having from *twelve to twenty* evacuations daily, some watery, others small, with discharge of mucus mixed with blood. No considerable amount of pain, and but slight tenderness upon pressure over the abdominal region.

Considering this a case rather of want of tone in the muscular and mucous portion of the bowels, than of decided inflammation, I directed him to take, in pills, five grs. salicin every fourth hour, and small sulph. zinc injections morning and evening, with such light diet as would agree well with him.

Improvement from the *third day*, and on the 23d of October— *eighteen* days from the commencement of treatment—dismissed the case, *cured.*

In a note appended the doctor adds: "This gentleman is now in fine health, with good prospect of long life."

In the N. Y. *Med. Journal*, October, 1875, Dr. S. H. Vail, Cornwall-on-the-Hudson, presents his experience with salicin, from which I condense as follows:

Case 1.—Feb., 1873. F. A., æt. eight months. Long standing diarrhœa; six to ten evacuations daily; is steadily failing, though a large list of opiates and astringents has been employed. As *dernier resort* ordered salicin, one-half gr. thrice daily. Amendment almost immediate. In *three* days marked improvement, and patient progressed rapidly to *entire recovery.*

Case 2.—Oct., 1873. A. B., æt. seven months. Diarrhœa two months; complete intolerance of food; great emaciation; ten to fifteen evacuations; patient apparently in last stages of marasmus. Ordered salicin, one-half gr. three times daily, with

liniment of equal parts cod oil, glycerine and tinct. opii., rubbed, warm, over abdomen, five minutes thrice daily, followed by flannel band saturated with the same. Diet, small quantity of pure milk, every hour. Fourth day emesis and diarrhœa had somewhat subsided. Improvement progressive, patient making an astonishingly steady and quick recovery. All danger from the diarrhœa disappeared in from seven to ten days, but the salicin was continued several weeks as a tonic, it acting well, and the little one seeming to grow fond of it, until, the system becoming sated, it was rejected.

I ask your particular attention to this case, as it illustrates, aside from the strictly medicinal part of the treatment, a point of importance. You will note that the diet was "small quantity pure milk, every hour." Vogel, in his admirable treatise on the Diseases of Children, speaking of chronic diarrhœa, remarks:

"I have often satisfactorily convinced myself of the utter inefficacy of all therapeutical remedies in the treatment of this disease, when the child is sustained on a milk diet."

Now if in this instance the milk food were continued, it certainly affords increasingly strong evidence as to the value of salicin. That proof is furnished by the following:

DEAR DOCTOR:

In case number two milk was the diet throughout, the intervals and amount varying after the first few days. N. H. VAIL.

CASE 3.—Oct., 1873. This case came under observation the very next day after No. 2. C. D., æt. ten months. Diarrhœa all summer. Resembles preceding case, save emaciation not so marked. Various M.Ds.; various remedies; failure. Ordered salicin, one-half gr. *ter die*. In *one week* marked improvement; *one month*, dismissed, *cured*.

CASE 4.—Mrs. L., æt. 72. Diarrhœa for years. Tried everything; now relying on opium, and fast becoming an inebriate. Ordered salicin, one gr. three times daily. In *one week*, much better; *one month*, *cured*. Cure persistent for three months, when case was lost sight of. Said she had a new lease of life.

Dr. I. C. Bishop, of Middleport, Ohio, has contributed two cases, as follows:

Feb. 15th, 1874. C. D., æt. eight months. Diarrhœa four weeks; discharges watery and almost constant; sunken eyes, pinched expression, skeleton emaciation. Ordered salicin, two grs. in sugared milk every two hours. Feb. 16th, evacuations less frequent. Feb. 17th, improvement continues. Feb. 18th, diarrhœa almost subdued, but continue salicin as a precautionary measure *one week*. Discharged, *cured*.

F. Q., æt 2½ years. Diarrhœa several weeks. Fifteen to twenty evacuations daily. Ordered salicin, dose and interval as preceding case. Improvement *at once*. In *two days* patient dismissed, *cured*.

I am under obligations to Dr. West, of the L. I. College Hospital, for the following cases:

C. N., sailor, æt 36, admitted Sept. 14th, 1876. Six weeks diarrhœa; six to ten stools, sometimes bloody, *per diem*. Some days evacuations every half hour. Was ordered bismuthi. sub. carb. et hyd. chlor. mit., of each 6 grs. at bed-time, followed in the morning by 1 drachm ol. ricini. Sept. 16th, prescribed bismuth, 10 grs., et pulv. doveri., 1 gr. every three hours, till six doses were taken. Sept. 17th, improved; three discharges to-day. Sept. 18th, worse; six evacuations; ordered salicin, 5 grs. every four hours. Sept. 26th, better; three movements during the twenty-four hours, nocturnal only. Oct. 5th, remaining in *statu quo;* prescribed liq. ferri. nit., with effect of diminishing evacuations to one nightly. Improvement, however, was very transient, continuing only seventy-two hours, when the triple nocturnal discharges returned. Iron continued fifteen days, and abandoned. Oct. 20th, ordered com-

bination of bismuth, cubebs, of each 6 grs., pulv. Ip. comp., 1 gr. Oct. 26th, dismissed, *cured.*

N. B., seaman, æt. 38, admitted Sept. 17th, 1876. Diarrhœa six months' duration; five to eight discharges daily; was anorexic and weak. Ordered salicin, 5 grs. every four hours. Sept. 19th, improved; three movements *per diem.* From this date progressive amendment. Oct. 1st, one evacuation, color and consistence healthy. Oct. 5th, discharged, *cured.*

I conclude my record with two striking cases furnished through the courtesy of Dr. C. E. Fritts, Senior House-Physician, Kings Co. Hospital.

Harriet H., æt. 45, admitted October 14th, 1876. Diarrhœa three months' duration. *Twenty* evacuations daily; was emaciated and weak. The usual remedies were employed with little avail. Ordered salicin, five grs. every two hours. *Two days* subsequently, intestinal movements reduced to *ten*, and general condition improved. At the expiration of *one week* one evacuation daily. Color and consistence normal. Two days later, *nine days* from commencement of treatment, patient discharged, *cured.*

Henry B., æt. 35, admitted October 22d, 1876. Diarrhœa two months' standing. All previous attempts at treatment futile. On admission, *evacuations hourly, night and day.* Ordered salicin, 8 grs. every third hour. In *forty-eight hours* discharges reduced to *five per diem.* In *ten days* case dismissed, *cured.*

No comment is called for. I commend salicin with confidence to your consideration, firmly convinced that we have in it a remedy of *unequaled* power in what has long been regarded among the *opprobria* of medical art, chronic diarrhœa.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 368 Fulton Street.

The January meeting will be held on the 16th, at which time there will be presented the following papers:

An Automatic Water Closet Lid, by Dr. G. R. Kuhn.

The Dilutions of Milk in Artificial Feeding, by Dr. J. Walker.

Election of Officers for 1877.

Report of Council.

Report of Treasurer.

Report of Librarian.

Reports of Standing Committees.

THE CAUSTICS OF ZINC.

REMARKS BY DR. E. R. SQUIBB.

Several physicians, among them Dr. Marion Sims, have consulted Dr. Squibb as to the best and safest manner of applying the chloride of zinc. The difficulty appears to be that the caustic cannot easily be limited to the part to which it is desirable to apply it; especially is this the case in respect of the application within cavities; for example, epithelioma of the cervix of the uterus, in which disease the chloride of zinc offers its best results. The excess of caustic gradually creeps down, comes in contact with, and plays the mischief with the vaginal walls: this takes place under the ordinary form of application by means of a pledget of lint, wet with a strong solution of the zinc, which is held in place against the diseased cervix by a tampon.

Dr. Squibb suggests, in the first place, that a less quantity of the caustic be employed, so that by its combining with the albumen of the diseased tissues, there shall be none to overflow upon sound tissues. Moreover, the upper layer of the tampon may be prepared with a carbonate of soda solution and allowed to dry before the application; the soda and excess of the caustic coming in contact, will re-combine and form a chlorinate, a sort of disinfectant. But the soda itself is an irritant, although not caustic. It may be well to try carbonate of lime: dust the upper surface of the tampon, and thus disarm the zinc.

But, perhaps, better than these will be the use of the nitrate of zinc. It is less deliquescent, and very much more manageable than the chloride. Dr. Fisher has found it especially applicable within cavities. A hot, concentrated solution is made of the nitrate; into this a layer of cotton is dipped and then allowed to dry; the salt crystallizes in the meshes of the cotton, which can be adapted readily to the contour and irregularities of surface of epithelial growths and the like. This may be held in place by a tampon, which will absorb all excess of caustic.

——Dr. Sherwell had used what is known as the fused nitrate of zinc, especially as a caustic in lupus erythematosus.

——Dr. Skene had formerly used the "caustic arrow" for epithelioma of the cervix, and had regarded it of great value. But the difficulties in its management had caused him to discontinue its use in favor of the galvano-cautery or *écraseur*. In one case of very extensive (cancerous) disease of the mamma, he had used the chloride of zinc in a concentrated solution as an application after operating with the knife. He had sponged the whole of the very large wound with this caustic, and then closed the

wound except at the lower angle. The wound promptly healed. It is now two and a half years since the operation, and the disease has not returned. This was a most unpromising case for any kind of operation; the patient, who was sixty years old, having been previously operated on, with a rapid return of the disease in the cicatrix six months thereafter.

EDITORIAL NOTES.

——Dr. T. G. Thomas contributes a Centennial paper on that department of medicine which he so greatly adorns with his own thought and labor. It is one of the best of the historical papers of the year. It makes mention of the contributions to gynæcology by several of our members; but it overlooks what has been laconically called "the Brooklyn treatment" of puerperal eclampsia—namely, that advanced by Dr. Fearn, employing veratrum viride in large doses. In speaking of the earliest practice of obstetrics by males, Dr. Thomas follows the much-quoted Bartlett, and gives precedence to Dr. James Lloyd, of Boston, as the first (in 1753) to undertake midwifery in this country. Dr. John Dupuy, "learned professor of chirurgery and medicine," practiced that art in the province of New York, while Dr. Lloyd was still a student under Smellie and Hunter. This we know from a quaint notice of his death in 1845, in the *Weekly Post Boy:* "Last night died, in the Prime of Life, to the almost universal Regret and Sorrow of this City, Mr. John Dupuy, M.D., and Man Midwife; in which last Character, it may be truly said here, as David did of Goliah's Sword, There is none like him."

——A Boarding-school Case.—A frail girl at school had ten studies! A system of marking was rigidly enforced, 100 being the maximum of good recitations, or perfection in recitation. A monthly report was sent home. All institutional and social influences were brought to bear to stimulate to perfection. The girl was obliged to send home one report, in which it was announced to the parents that she lacked 2-100ths of perfection in one or two studies. She accompanied it with a letter of regret and self-condemnation, and expressed her determination to send better reports in the future. Alas! before the next month disease had claimed its legitimate victim, and that poor overtasked brain was enjoying such a period of rest as only the delirium of fever affords. What unmitigated outrage attends much of this so-called education of our youth. Our children need to receive that sound education which consists in the liberal educing of the faculties of the mind as a counteracting agency to the instincts—one which co-ordinates these faculties—which

gives exercise to reason and judgment, at the same time that it represses without ignoring the instinctive part of our nature. Precocity is an actual danger, and should not be fostered as a wonderful evidence of talent.—*Dr. H. M. Knight.*

——The Newspapers.—A breezy quarrel stirs the medical fraternity in Michigan, which bids fair to find its way into the halls of justice, instead of being allayed by arbitration, or by being laid before a *court-medical*, as the ethics seem to require. A professor in one school threatens with a libel suit a medical journal whose editors teach in another school in the same State. Of course the newspapers scent the fray from afar; and of course they make fun of that party which to them appears most strict and illiberal. The *Detroit Medical Review* judges that the proceedings of their societies have appeared too frequently in the public press, that the profession has been harmed by the wide diffusion of their warm debates. The *Review* further moralizes in effect as follows: "Unable to understand, from the very nature of things, the questions at issue, the people look with contempt upon what seems to them petty trifling. Reporters from the public press give what facts and coloring seem best to them. They are, no doubt, honest and capable reporters, but it is their duty to make matters readable to the laity—and *ridicule of doctors is always readable matter*. The profession has been bedaubed with abuse; we have been called bigots, fanatics, etc. Had the reporters been excluded from our meetings, we had been spared much of this infliction. Now, if it is wrong, quackish for an individual to publish in the daily press as from a local society a paper on syphilis, obstructed menstruation or treatment of diphtheria, it cannot be right as from a State society. No reports from medical societies should be allowed in the newspapers on matters of ethics, etiquette or purely technical knowledge. All societies should exclude reporters. If need be, let the societies employ their own short-hand reporters, and then edit and publish privately. Matters relating to the public health, capable of being comprehended by the laity, should be prepared for the public by a special committee." In condensing the above pithy conclusions of the *Review*, justice has scarcely been done. In this part of the country some of them have already been carried into practical operation. . . . And here we may state that the paragraph on the Newspapers (page 170, September number) was quoted in full by the *Lancet*, with comments to the effect that this action was creditable to the profession here, and might profitably be imitated on the other side.

——Dr. Mattison will deem it a special favor if those who may give salicin a fair trial in the treatment of chronic diarrhœa, will report to him their cases, in detail, with the results, favorable or otherwise, the object being, further clinical contributions to the therapeusis of this disease.

——Medical Impostors.—How to deal with pretenders—men who without education or conscience, and with the sole credentials of a tin sign, set out to practice medicine—is everywhere a baffling question. In London the profession has recently formed a protective association for the purpose of prosecuting illegal practice. In this land of freedom, where quacks have just as good a standing before the law as Esculapius himself, prosecution is simply out of the question. But that some good may be done here by associated action is seen in a recent event in New York. In that city, especially on the east side, a large German-speaking population affords a grand field for imposture. A man named Cilulke, said to be a Bohemian barber, but claiming to be a Vienna graduate, set up a dispensary, where he offered advice and medicine for 75 cents. Certain suspicious diagnoses and certificates of death aroused the neighboring physicians to combine and set on foot inquiries which have resulted in a public exposure and an erasure of his name by the Health Board. The man now proclaims his intention to secure an American diploma, while the east side profession indignantly call upon the authorities to put an end to the existing fraud-inviting system. Brooklyn has its east side as well as the other cities mentioned.

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(1874 to 1878.)

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Medical Society of Kings County.

56th ANNUAL MEETING, JANUARY 16th, 1877.

LIST OF NOMINATIONS FOR OFFICERS AND DELEGATES.

By-Laws, Chap. 1, *Art.* 5.—Nominations for Officers and Delegates shall be made at the December meeting. The Secretary shall have the names of all nominees printed on slips of paper, two of which shall be sent to each active member.

☞ In voting, use the slip as a BALLOT, after having drawn a line through the names of those nominees for whom you do not wish to vote.

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For Vice-President.

Dr. E. N. CHAPMAN. Dr. C. JEWETT.

For Secretary.

Dr. WYCKOFF. Dr. RUSHMORE.

For Assistant Secretary.

Dr. EVANS. Dr. PILCHER. Dr. SIZER.

For Treasurer.

Dr. HOPKINS. Dr. C. JEWETT.

For Librarian.

Dr. HUNT. Dr. REESE. Dr. SQUIBB.

For Censors [five in number.]

Dr. BAKER,	Dr. BURGE,	Dr. CORBALLY,	Dr. HUTCHINS,
" J. A. BRADY,	" J. E. CLARK,	" CORBIN,	" PILCHER,
" BUELL,	" F. H. COLTON,	" HAWLEY,	" ROCKWELL,

Dr. RUSHMORE.

For Delegates to the American Medical Association.

The next convention is to be held in Chicago, June 5th, 1877.

Dr. BAKER,	Dr. CRANE,	Dr. KUHN,	Dr. SHERWELL,
" BEARD,	" FEARN,	" MITCHELL,	" SKENE,
" BELL,	" GIBERSON,	" PILCHER,	" SQUIBB,
" BODKIN,	" GRIGGS,	" REESE,	" VANDERVEER,
" BURGE,	" HAWLEY,	" SANTOIRE,	" VROOMAN,
" BYRNE,	" HUTCHINS,	" P. L. SCHENCK,	" WALKER,
" C. F. CLARK,	" HUTCHISON,	" SEGUR,	" YOUNG,

Dr. ZABRISKIE.

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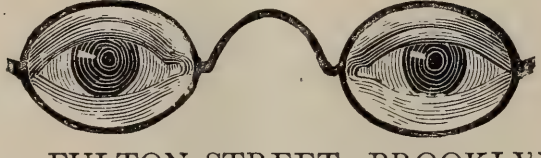

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PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, JANUARY 16, 1877.

THE LATEST INVESTIGATIONS INTO THE GENESIS OF TUBERCLE.

BY N. B. SIZER, M.D.

[Read in Oct. and Nov., 1876.]

No subject is more interesting and important than researches into the true nature of Tuberculosis.

Much diversity of opinion has existed in all branches of this investigation, even the fundamental points are scarcely yet settled; but since *Virchow* pointed out that the specific cell elements must be sought for in the new formations, observations have been frequent and fruitful.

Virchow considered the specific neoplasm to be the gray miliary tubercle, which he described as made up of cells embedded in the meshes of a connective-tissue framework, the cells being round and shining, of varying size, usually less than a leucocyte, but occasionally larger. Both *Virchow*, and *Rokitansky* after him, noticed the appearance of giant-cells, but attached no particular importance to it; *Rindfleisch* made similar observations in tubercle of the pia-mater and of the retina. He observed giant-cells with thirty to forty nuclei lying amongst the ordinary cells. *Wagner* has observed them in the liver, and *Busch* in the choroid.

Langhans was the first to announce the fact that giant-cells appear almost constantly in tuberculosis and in all parts of the body. He describ-

ed them as being round or elliptical; protoplasma pale, finely granular, having prolongations of varying size, form and contents. Nuclei often very numerous; large, vesicular, dark and highly refracting, enclosing a few nucleoli. He observed, like *Virchow*, both the fibrous and cellular tubercle.

Wagner and *Schueppel*, somewhat later, investigated the structure and development of tubercle. *Wagner* first pointed out (1871) the true nature of those nodules since called lymphadenomata, established their structure, and differentiated them, through their non-vascularity, from the lymphfollicle. He considers the reticulum of great importance, and that it is similar to that observed in granulation-tissue.

Schueppel, in his work on "Lymph-gland Tuberculosis," says:

"Tubercle is a tumor, usually sharply defined, especially when small, which surrounds blood-vessels; it is made up of cells and of a reticulum similar to adenoid-tissue, in whose meshes the cells lie embedded. The cells are the important element, and may be differentiated into three distinct forms: giant-cells, large epitheloid cells, and small lymphoid cells."

He describes giant-cells as uniformly characteristic of tubercle. When single the cell is central, when multiple they may be irregularly dispersed with small cells between. The epitheloid cells make up a large part of the cell mass. He says:

"Their shape is four-cornered or round, often elongated or spindle-shaped. They have no distinct cell-wall. The protoplasma is granular, the nuclei are usually oval, diameter *mm.* .008 to *mm.* .015. They are pale, single in contour under high-powers, and homogeneous, except for the nucleoli. These are small, highly refracting, and may be single or multiple. The nuclei are usually single, and are often constricted, being biscuit or bean-shaped. These cells bear a close analogy to many epithelial cells, and fill up singly or several together the meshes of the reticulum. They surround the giant-cells on all sides, and extend to the periphery of the tubercle. Lastly, the small round cells are of less importance, and are identical with lymph corpuscles."

So much for *Schueppel*.

Buhl and *Koester* attach great importance to the giant-cells, and consider them a constant product of tuberculosis. *Hering* differentiates two forms of tubercle—reticular and endothelial, the former occurring in tissues altered by chronic inflammation, the latter in normal tissues. He admits the possibility of the absence of any one kind of cell, or even of the reticulum, in true tubercle.

Rindfleisch occupies a peculiar position. He considers that tuberculosis is closely related to scrofulosis; that its development depends upon the existence of this diathesis; that tubercular lesions cannot be sharply differentiated from inflammatory changes, and that there is no such thing as specificity of tuberculosis.

We may then consider the presence of giant and epitheloid cells as indicating the existence of tuberculous, or, following *Rindfleisch*, scrofulous, inflammation. *Schueppel*, *Koester* and *Friedlaender* have made valuable use of this fact in their researches. Three other elements in diagnosis assist us: the reticulum, the small lymph-cells, and the nodule form of the neoplasm.

The origin of these various cells has been hitherto uncertain. *Virchow* considers that in retinal tubercle the giant-cells are proliferated fat-cells. *Rindfleisch*, *Deichler*, *Buhl*, *Colberg*, *Manz*, have called attention to the fact that tubercle arises in the immediate vicinity of a capillary, and that in the pia and choroid the cells may arise from those of the adventitia, while in the retina *Rindfleisch* ascribes their origin to the endothelium. *Langhans* thinks they are either the result of the proliferation of a single cell, or the welding together of several. From inoculation of tubercle in guinea-pigs, *Klebs* thinks the giant-cells lie in the lumina of lymph-vessels. *Koester* agrees with *Klebs*, while, in liver tuberculosis, *Wagner* derives them from the liver cells, and *Colberg* from the cells of the capillary walls.

Schueppel, however, has found giant-cells in localities where no lymphatics exist; hence he believes that the giant-cells are developed from either emigrated leucocytes, or from the fixation and growth of some of the masses of protoplasm which are found circulating with the blood. He considers that the reticulum is a new formation, and the other cells are the offspring of giant-cells.

Hering thinks that giant-cells are sections of lymph vessels, the nuclei representing the proliferated endothelium. The other elements he considers uncertain in their origin.

Buhl, in his letters on tuberculosis and phthisis, ascribes the origin of the cell elements to proliferated tissue-cells. He considers an origin from leucocytes or circulating protoplasts improbable. *Rindfleisch*, in late observations, agrees with *Schueppel* as to the intra-vascular position and endothelial origin of the giant-cells.

In a paper read before this Society at its meeting for May of the current year, a brief statement was made of the present condition of our knowledge of those wonderful protoplasts, the leucocytes. Bearing in mind the facts then presented, I have now great pleasure in supplementing that paper by presenting to your notice the researches of *Dr. Ernst Ziegler*, first assistant to *Prof. Eduard Rindfleisch*, of the University of Wuerzburg, made during the summer and fall of 1875. Having received a copy of his monograph, I take the earliest opportunity of acquainting you with his wonderful and important results.

Ziegler's researches were not originally directed to the investigation of

tuberculosis, but were intended to study the changes through which leucocytes passed after emigration.

The first *desideratum* was to devise means satisfying three conditions: 1st, Non-interference with cell metamorphosis; 2d, Isolation from the rest of the organism; 3d, Facility for microscopic examination. A hint was furnished by the observation of *Rindfleisch*, that when pieces of cork are allowed to remain in the peritoneal cavity, their pores become filled with emigrants, from which blood-vessels develop. Two conditions remained to be fulfilled: 1st, a capillary crevice allowing the use of high powers; and, 2d, requiring no section cutting.

After several failures, the following plan was adopted: A piece of thin plate glass, 20 to 30 *mm.* long, 20 to 25 wide, had its corners and edges ground and polished, and a thin glass cover was cemented upon it by porcelain cement, applied hot at the four corners only. Thus is formed a capillary space open on four sides. These were placed in the peritoneum of dogs and rabbits, and examined after a variable interval. The early experiments failed, from the use of poor cement, which allowed the covers to loosen.

The next series of experiments was uninteresting. In most cases no inflammatory changes occurred. In one case general peritonitis was excited by unclean instruments. Nothing was found in the capillary slits but wandering cells in retrograde metamorphosis. The peritoneum seeming to be unsuitable for investigation, glasses were placed in the pleura, pericardium, joint cavities, and under the periosteum, with no good result. The glasses were then placed under the skin and between the muscles, the incisions being closed with suture.

This third series was more successful, but in thirty-five cases two slides only were found in which progressive metamorphosis had occurred. These contained vascular tissue and giant and epitheloid cells after fourteen days.

A fourth series was begun, dogs alone being used. The glasses were smaller, 6 to 20 *mm.* long, 8 to 12 wide, as larger ones frequently excited suppuration. The locations were the inside of the thigh, the abdominal wall, and the neighborhood of the scapula. The skin was incised, a cavity made by pushing the handle of the scalpel under the skin, a glass inserted, and the wound closed by suture. Union by first intention was usual, and suppuration rare. The specimens were removed from the 10th to the 25th day, even as late as the 70th. No swelling or infiltration was usually noticed after the 10th or 12th day; and, on incision at the 14th day, the glass was found surrounded by connective tissue. These specimens were unimportant. A few necrobiotic cells,

with masses of hæmatoidin crystals, were found, probably from entrance of blood during the insertion of the glass.

When the inflammatory swelling and infiltration of the tissue had lasted a long time without terminating in suppuration, the glass was found surrounded by a capsule lined with granulations. From such wounds, after sixty days, the specimens showed the development of giant and epitheloid cells from lymph cells. Preparations where suppuration had occurred exhibited only masses of pus-cells.

The tabulated list shows that of eighty-three preparations : twenty contained giant-cells, still fewer showed vascular tissue, while the majority had neither, but were found to contain only necrobiotic lymph cells. It seems best to divide the giant-cell specimens acccording to their age.

Group 1.—1 to 10 Days Old.

Of these there are four preparations only, since *Ziegler's* early observations taught him that during the first eight days insignificant changes alone are found, which will be studied with

Group 2.—11 to 25 Days Old.

Here we find tissue formation reaching its highest point from the fifteenth to the twentieth day. Earlier the cell-growth is not complete, later fatty degeneration ensues. In sixty-two experiments, seventeen were very successful, showing peculiar changes, beautiful and easy to follow. The specimens were prepared by immersion for two or three days in a one per cent. solution of perosmic acid, after which they were preserved in glycerine or a solution of potassium acetate. I give below the study of a preparation removed on the seventeenth day from the left thigh of a small dog, the surrounding cavity being filled with granulations. A low power shows the periphery of the specimen stained darkest by the acid, and made up of a membrane-like substance, while farther in the single elements are found. Higher powers show the latter to be pus-cells, surrounding occasional larger cells wanting in a distinct cell-wall, and possessing large nuclei and brilliant nucleoli. They vary in size from a pus-cell to that of a mouth epithelial cell. They are round or oval in form, very seldom irregular. The periphery of the specimen is of more interest. Here we find giant-cells with many nuclei, numbering from twelve to thirty or more, scattered irregularly through the protoplasm of the cell itself, which is generally round and destitute of a cell-wall.

The meshes of the reticulum in the immediate neighborhood of a giant-cell are usually empty, while at a greater distance they are filled with closely-packed polyhedral cells, separated from each other by a

sharp double contour. These, when small, resemble leucocytes, but lose all lymphoid character as they grow, until they approach the character of small giant-cells. These epitheloid cells are usually found singly and surrounded by lymphoid cells, the pale protoplasm of the latter strongly contrasting with the dark granular protoplasm and large vesicular nuclei of the former. As the cells grow, the finely granular protoplasm appears to pass to the periphery of the cell, and forms the interstitial substance; delicate at first, it at last presents a double contour which sharply divides the cells from each other. As the granular protoplasm moves to the periphery of the cell it is gradually replaced by a clear, transparent material which ultimately fills the cell. The nucleus generally moves to the periphery of the cell and unites itself with the forming interstitial substance.

Ziegler describes at great length several specimens of this group, but I have neither time nor space to follow his example.

Group 3.—26th to the 70th Day.

Although the cells begun to degenerate before the twenty-fifth day, it was hoped that by following the fate of the giant-cells further their value and meaning might be discovered.

Specimens of new-formed blood-vessels were also observed in the second group, but the third group alone showed their relation to the giant-cells. If we carefully follow a vessel we shall come in places upon large giant-cells, forming the swollen end of a vascular branch, while the transition from the vessel containing blood to the giant-cell is by means of a capillary, filled with granule cells, and as yet without a lumen. From these observations it is probably established that giant-cells develop into blood-vessels, and their nuclei into blood-cells. An interesting circumstance was the discovery of two giant-cells, each of which possessed a large central lumen, which was empty in one, in the other filled with red blood-cells.

Ziegler discusses at great length the formation of epitheloid and giant-cells, but we have only room for a few important conclusions, as follows:

First. Taking all facts into consideration, the origin of giant-cell new formations from emigrated white blood-cells is *provable* in some cases, and *probable* in all.

Second. Giant-cells may be considered, for the present, as the rudiments of vessels which only await an opportunity to join an existing vessel.

Third. The origin of giant-cells from white blood-cells is proved.

Fourth. It is probable that other young cells, when placed under appropriate conditions of nutrition, may undergo the same metamorpho-

ses; the white blood-cells, however, are to be considered as the most important source of giant-cells.

Fifth. The amount of nutrition afforded to the young cells must not be too liberal, but sufficient to prevent death of the protoplasm.

Sixth. We can be certain that every inflammation can produce giant-cells.

Conclusions in Regard to Tuberculosis.

If we compare the microscopic anatomy of tubercle with that of our experimental products, we must be struck with the essential similarity. True, giant-cells are not found in every tubercle, and they are found occasionally in non-tuberculous malignant growths. Still, if we remember that giant-cells are almost constant in tubercle, and usually absent in other neoplasms, we shall readily perceive that the presence or absence of giant-cells is of great importance in the study of a new formation.

Tubercular diseases are different from all other pathological processes, not in the fact that they produce giant-cells, but because certain previous conditions modify the course of the disease so as to lead to a giant-cell formation. If, then, we can excite a pathological process, and, by distinctly modifying its conditions, cause the production of the characteristic elements of tubercle; and if, at the same time, we know that the conditions under which the process occurs are also probably true for tuberculosis, we may draw the conclusion that elements which are identical possess the same origin and pass through the same development. The anatomical differences between tubercle and the experimental products of *Ziegler* are too insignificant to be mentioned, as can easily be verified by any one who compares his plates with those of *Schueppel.* This is true of all the elements—the giant-cells, the epitheloid and lymphoid cells; but is wonderfully true of the reticulum, which resembles very perfectly the network of reticulated tubercle. We find the same arrangement of nuclei, the same size of meshes, and the same mingling of small round cells.

Since no anatomical objection can be urged against the identity of these tissues, a similar genesis is highly probable. In these experiments the same order of time is observed as in tubercle; the exudation of lymphoid cells produces, first, giant-cells, then epitheloid cells and a reticulum. These coincidences cannot be accidental.

Furthermore, if we remember that tubercle always arises close to a capillary or lymphatic, we readily perceive the probability of its origin in a local diapedesis, whose cells do not undergo necrosis because the nutrient vessels are so near.

Schueppel, *Billroth*, *Cohnheim* and others have already announced this theory of the origin of tubercle, and *Ziegler's* observations have almost proved it. The theory may be formulated as follows: Tubercle is an accumulation of white blood-cells, with or without diapedesis, as it occurs outside or inside a vessel. Such a process is inflammatory, however; therefore: Tubercle is an inflammatory new formation, which differs from *all* others by non-vascularity, from most others by the development of giant and epitheloid cells, and a reticulum. These elements are not specific, for they occur in other neoplasms; they are sometimes absent even in tubercle, and very rarely even the miliary form of lesion is absent: thus peri-vasculitis of the pia-mater occurring in scrofulous children is undoubtedly tuberculous, but the histological landmarks are sometimes entirely wanting. The same is true of interstitial hepatitis occurring with general tuberculosis. Another example is the peri-vascular large-celled infiltration of the alveolar septa in chronic pulmonary phthisis, which is recognized as tuberculous by both *Rindfleisch* and *Buhl*.

The miliary arrangement is explained by the hypothesis of a local irritation. In septicæmia, decomposing particles circulating in the blood produce miliary abscesses where they chance to rest; in tuberculosis a less irritation produced in the same way results in non-suppurative inflammatory foci, which go on to tissue formation.

Ziegler agrees with *Von Waldenburg* in comparing tuberculosis with pyæmia, and associates them as diseases arising from absorption of irritating material, as shown by inoculation of tubercle.

These inflammatory foci would not be found in a healthy human being, but occur as the result of diathesis. *Schueppel* believes that certain individuals are liable to become tuberculous at the end of any inflammation, and *Rindfleisch* states that he has uniformly observed the peculiar large-cell-infiltrated character of all inflammations occurring in tuberculous individuals, and their tendency towards necro-biosis.

This diathesis is considered by *Rindfleisch* to be identical with the so-called scrofulosis, in which spanæmia and a yet unknown and hypothetical alteration in the blood produces a peculiar effect upon the blood-cells and vessels, facilitating the production of new non-vascularized inflammatory foci (tubercle), through the irritation of particles absorbed from any old inflammatory deposit.

We have no accurate knowledge as to why the tuberculous focus is not vascular, and observations hitherto have thrown no light upon the subject.

We must be satisfied with the conclusions that in certain individuals, known to us as scrofulous, an irritation producing inflammation will

evolve inflammatory changes histologically classified as tuberculous; that if, in a healthy animal, we excite inflammation, and modify it by preventing or postponing the vascularization of the exudation, we can produce the same elements as in the previous case; we therefore infer from this similarity of results, that scrofulosis exercises a peculiar influence upon the progress of inflammations and causes their products to appear tuberculous, and that tuberculous inflammation is generally identical with scrofulous inflammation.

I append a table of experiments, and a short bibliography of the authors quoted.

FOURTH SERIES OF EXPERIMENTS.

Number of dogs,	16	Experiments,	80
Thigh,	40	Abdominal wall,	22
Shoulder,	9	Flank,	7
Peritoneal cavity,	2	Total,	80

RÉSUME OF RESULTS.

Pus-cells only	10
" " and connective tissue	1
Giant and epitheloid cells and reticulum	20
Giant-cells and leucocytes	1
Leucocytes only	19
New-formed vessels	2
Detritus and hæmatoidin	17
Specimens broken and spoiled	6
Glass could not be found	4
Total	80

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——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 368 Fulton Street.

The February meeting will be held on the 20th. By special order of the Society this meeting will be devoted to a discussion of Dr. Walker's paper on "The Digestion and Dilution of Milk in the Artificial Feeding of Children." The following named gentlemen have signified their intention of being present and taking part in the discussion. It is hoped that the importance and practical character of the subject will attract a large attendance and a free expression of experience :

Drs. Wm. Anderson,	Drs. J. S. Hawley,
A. N. Bell,	C. L. Mitchell,
W. H. Bennett,	J. H. Raymond,
D. G. Bodkin,	C. H. Schapps,
J. H. H. Burge,	B. A. Segur,
D. E. Chace,	A. J. C. Skene,
E. N. Chapman,	G. K. Smith,
J. E. Clark,	J. C. Snively,
B. F. Fessenden,	W. H. Thayer,
G. G. Hopkins,	J. S. Wight.

Any other members of the Society desirous of participating in this discussion can, on application to the President, obtain a slip-proof of Dr. Walker's paper, and thus be enabled to consider the subject in advance.

EDITORIAL NOTES.

——The Proceedings of the Medical Society of the County of Kings.—With this number the First Volume is completed. It has been conducted without draft on the funds of the Society, that being the condition under which the Council was authorized to undertake its publication. At this day no apology is needed for its being. A study of its 280 pages will show that it has served the purpose of giving wide distribution to the excellent papers with which the Society has been honored during the past year, and of preserving for future reference much valuable material wrought out of the industry and enthusiasm of the members of this Society. Though this Society has a larger average attendance on its meetings than any County Medical Society in the United States, yet a large proportion of its members cannot attend all its meetings, and so are prevented from listening to all the papers there presented. This publication has furnished an impetus to good work in the Society, by putting ALL the papers into the hands of ALL the members. The new Volume will commence in March. A limited number of handsomely bound copies of the First Volume can be obtained from the Secretary at a cost of Two Dollars each. About 10,000 numbers of the Proceedings have been issued during the past year. With the subscriptions of the members of the Society the Council will be able to continue this large circulation.

——Chloroform, as an anæsthetic, has fallen into disfavor at Bellevue Hospital. Dr. F. H. Hamilton, at a recent surgical clinic, incidentally remarked that the commissioners had interdicted its use, but he made no reference to the causes that had brought about this decision.

——The Opium Antidote business has been sharply called upon to halt! by the Cumberland Medical Society of Maine. They have caused a quantitative analysis of certain of these nostrums to be made, and report the results widely among the profession. One specimen, manufactured by Mrs. J. A. Drollinger, of La Porte, Indiana, was analyzed by Walz and Stillwell, New York city, who found it to consist of glycerine colored with aniline red, and to contain in solution 1.383 per cent. by weight of the sulphate of morphia—about seven grains to the ounce. The second was the preparation of "Dr. S. B. Collins, the great Narcologist of the Age," also of La Porte. The analysis of this was made by Dr. Henry Carmichael, Assayer of the State of Maine, and differed from the preceding only in the amount of the sulphate of morphia shown to be present, namely, 3.2 per cent. A teaspoonful (a dose frequently prescribed by the proprietor) would contain almost two grains of the morphia—nearly twelve times the ordinary medicinal dose.

The Society publishes these results "in order that the large number of opium-eaters in this country who are earnestly striving to overcome their health-destroying habit, may be seasonably warned against these widely-advertised nostrums, which, while promising a safe and sure cure, only serve to increase the appetite for opium, until it finally becomes unconquerable." This action deserves to be widely known.

——Medical Bookkeeping.—A new and improved system of recording the accounts of physicians has been published by Mr. S. H. Moore, of 52 John Street, N. Y. Dr. A. J. C. Skene is the author of the method.

——Ovarian Cyst.—Dr. R. Hesse, of this city, has successfully treated a case of this disease by means of electrolysis—probably the first success of the kind in the United States. The case will shortly appear in the *Obstetrical Journal.*

——The Germ Theory.—This so-called germ theory, I must confess, presents itself to my mind much as a like question presented itself to the cat, when, in a self-imposed pilgrimage, it met with the owl, and found that philosophic bird struggling with the problem: Which came first—the hen or the egg?—Dr. J. N. Radcliffe, on the Present Position of Epidemiological Science, *Practitioner*, *Dec.*, 1876.

——Vital Statistics.—The Board of Health of this city opens the new year with a vigorous circular on the all-important, but miserably neglected, registration of marriages and births. It says, "The Board confidently asks for such full and prompt returns in the future as shall enable it to make a perfect record." Physicians among others are called upon to do their share in the good work, and it is to be hoped they will surpass all the other classes of citizens who by law are required to give gratuitous labor to the gathering of the public records. But even in States where the collection of statistics is paid, the record is very far from perfect.

——An Automatic Water-Closet Lid was exhibited to the Society by Dr. G. R. Kuhn, and described as follows: "The lid which I wish to describe is made to slide horizontally upon the bowl of pan-closets and upon the hopper of hopper-closets, underneath the seat. When pressure is made upon the seat the lid opens, and when it is removed the lid will instantly close. This is done by rollers passing through the closet from the front to the back on both sides of the bowl or hopper, to which are attached hinges extending to the lid. When pressure is made upon the seat, or upon the floor directly in front of the water-closet, it depresses a lever, which turns the rollers outward, opening the lids, at the same time raising weights which are attached to the rollers.

When the pressure is removed the weights descending close the lids, pressing them tightly together. At the point where the two sides join they are covered with soft rubber, and are grooved, one side fitting into the other, making them perfectly tight. Also where the lid when closed rests against the edge of the bowl or hopper, it is covered with soft rubber. This lid may be attached to any existing closet, and when in good order no odor will escape from it, excepting when it is thrown open, in which case the gas that has accumulated between the trap and the lid will escape. But where it is attached to a bowl or hopper with an escape pipe extending from the top of the bowl or hopper into the sewer or ventilating pipe, the gas will be carried off by it.

"The advantages of this lid are: That it fits tightly upon the bowl. It is always closed, thus keeping a filthy object out of sight. It does not occupy any additional space. It is simple in its construction. It is cheap. The additional expense will be very slight, and when it is attached to a closet well trapped, with an escape pipe from the top of the bowl, and a sufficient supply of water, it will render the escape of effluvia into the house almost impossible, making water-closets endurable, which is not the case with the greater number of closets as they are made now."

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END OF VOLUME I.

THE

PROCEEDINGS

OF THE

Medical Society of the County of Kings.

1877.

CONDUCTED BY THE COUNCIL.

EVERETT HALL, 398 FULTON STREET,

BROOKLYN, N.Y.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, FEBRUARY 20, 1877.

THE DIGESTION AND DILUTION OF COW'S MILK, IN THE ARTIFICIAL FEEDING OF CHILDREN.

BY JEROME WALKER, M.D.

The main factor in the problem of artificial feeding of children is now, as it has ever been, the digestibility of cow's milk.

Great stress has been laid upon casein, as the offending ingredient; hence have arisen various methods of rendering it digestible. It is my purpose, this evening, to briefly review the current truths and falsities as to casein—what has already been accomplished (notably within the last twenty-five years) towards a judicious use of cow's milk, and to deduct conclusions.

MILK is composed of water, casein, butter, sugar and salts. These ingredients vary in quantity and mutual relations under various circumstances. In winter water diminishes, butter increases. In summer water increases, as also do the solids—casein, sugar and salts. In dry weather the quantity of milk is less, but the quality richer. "The afternoon milk is richer by one-quarter, on the average, than the morning's, and the last portion of a milking—the strippings—is the richest."

As Affected by Food.—"As long as the food of the cow is sufficient, nutritious and digestible, milk exhibits great constancy of composition, the variation in the diet showing itself in the quantity rather than the quality," says Franklyn. "Carrots increase the sugar, and slightly diminish the amount of casein and butter." (Report of Mass. State Board of Health). Beets and fresh foods increase the amount of sugar. "Cabbage, onions, turnips, saffron, wormwood, madder, fallen and decayed leaves, impure drinking water, may render the milk indigestible for the child, by changing odor, taste or color. Insufficient diet produces impoverishment in the solid materials. Brewers' grains rank under this head, when given as the main food, and are of service only when mixed with meal, hay, etc.

"Fermented food is totally unfit. Yet sour garbage and brewers' grains are much used in and about cities. Distillery slops, by stimulation, increase the quantity of milk, sometimes to a very large amount; yet, according to Dr. Edward Smith, the milk is incapable of producing cheese or butter, so deficient is it in albumen or oil. He found in a number of samples, with a specific gravity of from 1013 to 1024, $3\frac{1}{2}$ to 6 per cent. of cream, and 4 to 8 per cent. of casein, as compared with samples of country milk, specific gravity 1026 to 1030, 7 to 10 per cent. of cream, and 9 to 12 per cent. of casein." Distillery milk fills out the body of the child as distillery slops bloat that of the cow; but it is a question whether there is *healthy* growth.

City Milk.—The milk supplied in cities, according to investigations made in Boston, in 1873, by the Massachusetts State Board of Health, and in Brooklyn, by the City Board, in 1876, contains of fat 2.80 per cent. to 13 per cent.; of casein and salts, 3.66 to 12.9; when it is generally conceded by authorities, in good milk cream should not be less than 9 per cent. nor the solids than 12. These investigations show, as others have before,

1st. That the main adulteration is water, 10 to 25 per cent. According to Prof. Chandler, the average milk furnished in New York city contains one quart of water to every four of milk. This adulteration is governed by demand and supply.

2d. That there is no mutual diminution or increase between cream, casein and salts in the various specimens of milk.

3d. That a large amount of cream is *no* indication of the greater richness of milk. The sample of milk containing 13 per cent. of cream was diluted 25 per cent., while another, showing only 4 per cent. cream, was diluted 10 per cent. Cream rises from diluted milk with much greater facility than from that which is pure; generally all has risen by the end of 24 hours, while in pure milk cream continues to rise for several days.

4th. That a small amount of cream is often accompanied by a large amount of casein and salts. Hence poor milk may need more dilution than good, on account of an excess of casein. Very rich milk may need it, owing to an excess of fat. The average pure milk may need it, owing to an inherent or acquired inability in the child to digest it without.

Changes in Milk.—Fresh, *warm* milk is generally acknowledged to be most easily digested, owing to its retention of its unexplainable life principle, and the fact that it is quite thin, thickening as it cools. Artificial warmth will not restore this life principle, but it will, in a measure, thin the milk to its former consistency. Mr. Cleaver, Assistant Demonstrator to the Pharmaceutical Society, Philadelphia, states "that six hours after milk is drawn from the cow is the latest time, upon the average, at which milk should be analyzed, for then the natural changes of fermentation and putrefaction *begin* to be perceptible." "These are hastened by an atmospheric temperature of from 66° to 68° F. and above, and are retarded by a temperature of from 43° to 44° F." (Chevalier, Dict. of Adulterations of Alimentary Substances). Electrical changes in the atmosphere, jolting, the presence of even the slightest particle of fermenting matter, hastens them.

Casein is soluble in fresh milk, and insoluble in that which is "turned." "Warmth, and contact with the smallest quantity of milk already changed, favor its coagulation, though it is not coagulated by heat alone, but by rennet, gastric juice, alcohol, tannin, and a number of salts, by vegetable and mineral acids, especially if milk is heated to about 75°." Pepsine coagulates but slightly. Mixed milk, containing colostrum, will sometimes be coagulated by heating. So will heat sometimes cause milk to which adulterating substances have been added to precipitate, in a semi-solid mass, its coagulated albumen, entangled with the adulterations. Boiling thins milk, breaks up some of the fat globules, renders others lighter, but carries with them some of the casein. It drives off the contained air, which Dr. Jacobi believes to be the cause of acid fermentation of milk. After boiling, the doctor removes the coagulated film, as the cream has been removed before. It has always seemed best to myself to thoroughly stir in the filmy coating of albumen, cream and casein. Boiled milk answers well in diarrhœa, and scalded in constipation. "Rennet does *not* coagulate boiled milk either as promptly or completely as normal milk, under the same conditions." (Chevalier). The throwing down of casein carries with it cream, so that any attempt to remove casein removes cream.

The hardened fæcal passages not uncommon in children in our cities, fed mainly or entirely upon milk, are caused, according to most writers, by the quantity of casein in cow's milk. It is quite as often due, as was

pointed out by Dr. Coley in 1846 (Diseases of Children), to a deficiency of sugar, albumen or oil. Yet it is true that a surplus of casein is generally accompanied by a diminution in sugar. If casein is always the offender, how can we account for the good results obtained by Dr. Simington, of Danville, Pa., (see Trans. Med. Soc. of Penn., 1875), by the use of buttermilk in severe diarrhœas of children?

Again, during dentition the intestinal secretions may be in excess, and produce diarrhœa and indigestion, or from slight causes a catarrh may be set up, with like results, or a *decrease* in the digestive secretions not uncommon at this period, with a diminished peristaltic action, may prevent assimilation even of a normal amount of casein.

As Dr. Logan, of Kentucky, writes: "The digestibility of milk depends more on the *quality* than the quantity of casein." The milk of some women is bulky, and naturally as indigestible as any specimen of cow's milk can be. The milk of sickly, ill-nourished women or of those advanced in life is likely to be so.

Different Modes of Dilution.—Water. The addition of water alone, says Routh, favors the *separation* of casein and renders it harder. In some experiments I found this to be the case. In many cases, Jacobi's method of feeding will answer, viz., giving sweetened water, oatmeal or barley, as the case may be, before feeding, or, if the casein does not all digest, then adding mucilage, with sugar and salt, and antacids if necessary. Yet there are children whose stomachs revolt against barley, oatmeal, mucilage or boiled milk. This method of dealing with cow's milk claims, as do all others, that the milk is held in suspension, and the casein rendered lighter and more flocculent.

Lime-water has for a long time been in use, but in the practice of many it has failed. From various parts of the country physicians who use it write—when necessary, or if there is acidity.

Dr. E. N. Chapman, in a series of able articles published in *The Sanitarian* during the latter months of 1875, claims for his method of one-sixth lime-water wonderful results.

"Take condensed milk two teaspoonfuls, water 24 (or, if plain milk is used, water ½), lime-water 4, powdered sugar ½ teaspoonful, and a small pinch of salt. Bring the water to a blood-heat, measure the milk accurately by pouring from one spoon to another. Mix and stir the several ingredients together." He concludes that the good results "are not due to any alkalinity, but to the fact that the casein is held in emulsion, that the salt aids the stability of the emulsion, and the solution of the casein. I have used this method with some good results, yet one child vomited it whenever given. In this family of five children, none had ever been able to retain even the smallest quantity of lime-water."

Eustace Smith says one-third of any milk mixture should be lime-water. Routh advocates half ounce to half pint of cream and water. It is used by physicians throughout the country in from one-fourth to one-tenth.

Other Alkalies.—From experiments, I found that pot. bi-carb, added to milk in a summer temperature of 75° F., produced a hard, firm clot in a few hours, while sodæ bi-carb. formed one less firm, which was longer in its formation.

Prof. Buckingham, of Harvard, and others, find that practically pot. bi-carb. is the more suitable alkali. He prefers it to lime-water, and writes: "Add pot. bi-carb. 1 or 2 grs. to each ounce of milk, and dilute with water till proper dilution of milk is gained, as the same child would be likely to starve on milk which it does not digest. Then the addition prevents milk from souring for 24 hours, and renders the curd softer, like human." "The addition of soda to milk will not prevent the escape of the volatile acids when heat is applied," says Mr. Cleaver.

Pepsine fails in the hands of many, either acting feebly or coagulating milk into firmer clots. In such cases it may be a poor article, or may need an acid yoke-fellow, such as we find in gastric juice. Pepsine, muriatic acid, glycerine and water is an excellent preparation.

Glycerine.—Recommended by Dr. Channing to be used instead of sugar as an addition to milk, is of value, is bland, readily absorbed. For the first month of life he adds four drachms of glycerine to one quart of cream and water. Between the second and third months he gradually substitutes milk for cream, two parts, to water one part, if the child does not need the cream to fatten upon. At six months he gives pure milk.

Two propositions of late years exciting great interest are: First, the one to add cream or fat to milk as a corrective; and, second, the one by Dr. Hiram Corson, of Pa., to give whole milk.

Cream.—Much has been written against the use of fat, its indigestibility—yet in defective nutrition, and in weakened powers of digestion, cream, ol. morrh., fat and butter, if given in sufficiently small quantities and at proper intervals, will be more readily digested than other forms of food.

Various methods are resorted to by advocates of cream.

Dr. F. K. Bailey, of Knoxville, writes: "I have carried out the practice for forty years without variation of giving cream one-third, and sweetened water two-thirds. Dr. Jones, of Toledo, uses cream, one part: sweetened water, four or five parts.

It is the custom here, in Tuscaloosa, Alabama, writes a physician, to use two-thirds water with cream, but I like one ounce of cream and one of

aq. calcis. Some years ago Dr. Cummings, of Georgia, published a pamphlet describing an excellent method of preparing milk. I am sorry that I have it not at hand to quote from, as the pamphlet had, I believe, a limited circulation.

Any proposal to remove, first, the cream, then a part of the casein of milk, and then to return the cream, is not a reliable one, for casein and fat are so intermingled, that the removal of one carries the other, in part, with it. Then all milk is not the same milk. The milk of the Alderney cow will yield from 30 to 40 per cent. cream; Jerseys, 18 to 20; Devon, 17 to 18, etc. Other milk, as that from the Durham breed, is rich in casein mainly. Distillery milk shows much cream, and is poor milk.

Very rich milk may not be the best for the child. From such milk remove one-third cream or dilute with one-fifth water, or more, if necessary. If the milk has an excess of casein, it is much more rational, as Dr. Dawson has suggested, to add cream or fat than water. The severe cases of constipation, caused by such milk, are best remedied by the addition of cream or oil, or by giving child, if old enough, fat meat to suck.

The latest proposition is to add one scruple of ol. of sweet almonds to every two ounces of milk.

Other Additions.—Some of the old writers advised different preparations of farinaceous food—arrowroot, corn-starch, etc.—to be added to milk. Though not now recommended, yet we find the two combined in use in many families, and apparently with good results. The nitrogenous foods answer a better purpose in the majority of cases.

Gelatine.—Similar in its action and properties to gum arabic is gelatine. Dr. Meig's Gelatine Food, prepared with cream, still retains a prominent place in the dietetics of infancy, though, like all other foods, it is not a panacea.

Salts.—It is worthy of note that in all the differences of opinion as to food, chloride of sodium is looked upon generally as a necessary addition.

Some go further, and believe that the phosphates are necessary in some form, especially in children who do not thrive upon their cow's milk, or to be added to the milk of cows fed upon poor pasturage, or when the milk lacks salts.

The plan of Dr. Wiggins, of Providence, which has been quite largely used, is as follows :

Commence with one part of milk and two of water, add cream from a quantity of milk equal to that of the water added ; also add a pinch of the phosphate mixture, and 40 grains of milk sugar to each meal.

Dr. Wiggins' Phosphate Mixture:

Phosphate of lime, . . .	4 parts.
" " soda, ...	½ "
Hypophosphate of magnesia,	½ "
Chloride of sodium, . . .	2 "
Carbonate of potassa, . .	2 "

The first week's feeding, writes the doctor, often decides the fate of the child. I gradually increase the quantity of milk. Warm fresh milk is successful with children of fair digestive powers, and is much resorted to in the country.

WHOLE MILK.—That this last statement is true, is evident to any one who has seen it tried, or who has had occasion to feel grateful for the ease with which some babies will digest *pure* milk, even in the city, when all other foods have failed; but it *should be* good, wholesome milk.

A baby born dyspeptic, whose mother was of nervous temperament, not able to digest the mother's milk, notwithstanding all care taken to assist the child and remedy the curdling of the milk—rejected milk diluted with water, mucilage, barley, oatmeal, etc. Liebig's, Imperial Granum and Cereal Food, with what cream could be obtained, was digested. Going to the country at four months of age, although the mother had been advised to give warm fresh milk, she diluted it, without success. The child then took fresh warm whole milk, and thrived; coming home, it did well on whole milk here, even digesting it cold, though when cold there seemed more of a tendency to constipation.

The milkman's route being sold to another, the child did not do so well as before and was very constipated, passing hardened fæcal balls. An examination of the milk showed it to be much poorer in appearance than the preceding milk, having less cream, and containing over one-half in bulk of casein.

Dr. Corson's faith and practice grew out of the belief which many share to-day, that underfeeding is the prevalent evil—that filling the stomach merely is not affording nourishment. We are to ask ourselves, in each individual case, the question:

Does the food administered contain all the elements of nutrition in such form and quantity that they may nourish the child, through a painless, prompt and easy digestion? as well as the second one:

Does it contain anything injurious, or that cannot be digested?

Eustace Smith has pointed out the great difference between proper and improper artificial feeding, claiming that with the first there is as great success as when children are nursed. Dr. Corson but echoes this when he writes: "I feel quite certain that it is almost as easy to

raise children by hand, if they have an abundant supply of good whole milk, as it is by the breast. The plan of diluting milk with water is 'starvation by prescription.' Uses no other milk but cow's milk, either given fresh, or after it has stood in a cool place in the cellar—have raised nine children of my own on whole milk, and have an experience with whole milk of over forty years." In a letter he relates the following case, which, for lack of time, and from a fear of taxing your patience, I am compelled to give an abstract of: "Child, æt. six months, bottle fed, dilute milk, brandy, blood, etc., reduced to 4½ pounds in weight—pronounced to be a case of hopeless marasmus. I ordered, without regard to consequences, a tablespoonful of whole milk to be given every hour, and to increase the quantity, as soon as possible, to as much as it could take. The first dose it rejected immediately, a part of the second, and retained the third. In a week it ceased to moan, showed improvement, and went steadily on to grow and fatten. It is now a chubby, healthy child of four years."

It is not necessary, writes the doctor, to have the milk from one cow, if it is inconvenient to get it; the ordinary run of mixed milk from a good dairy may be used to advantage.

Condensed milk, though useful, does not in reality represent the mixed fresh milk from a good dairy, any more than canned meat extracts represent the fresh juices of fresh meat. The ordinary mixed milk of the cities may not be digested, for various reasons, as we have already seen.

The rules of the Obstetrical Society of Philadelphia, issued a few years ago, for the management of infants in the hot weather, convey the same meaning.

"If the milk is known to be pure, it may have one-fourth part hot water added to it; but if it is not known to be pure, no water need be added. When the heat of the weather is great, the milk may be given cold. Do not skim the milk. In very hot weather boil as soon as obtained, and then place in cool place. Whenever pure milk cannot be obtained, give condensed milk."

Dr. Logan, of Shelbyville, Ky., writes: "Don't dilute at all. Numbers of children in this section are raised on pure warm milk, and fully three-fourths of them live as long and prosper as much as when nursed. He lays great stress, as we all may with advantage, on the importance of keeping the body cool as an element in aid of digestion."

Prof. Byford says: "We consider fresh milk, drawn but a few hours, and from one cow, better than that mixed. Let it stand in a deep, narrow vessel for about three hours in a cool place, then pour off the upper two-thirds for use in summer. Under four months add lime-water, if

tendency to acidity, and soft water if no such tendency. If diarrhœa, boil before diluting."

From Greensboro, Ala., comes the statement, that warm fresh milk is used here, and seemingly with as good success as by any other method, selecting, if possible, cows with the youngest calves.

Prof. Goodell writes that warm milk is not used in Philadelphia, as a rule, because it cannot be obtained.

In Schenectady, *cold* fresh milk used with success.

Dr. Thayer, of Binghampton, writes : "We use milk, undiluted. It cannot be improved by diluting."

Dr. Hamlin, of Bangor, *knows* that artificial feeding with whole milk is successful there, if swill milk is not used. It may be given cold or warm.

It is curious to note that in Columbus, O., Reading, Pa., and Athens, Ala., and other cities of the country, pure milk is given after the first month, or second, or third.

Experiments.—The following is an abstract of such points, in experiments made last summer, as bear upon the preceding remarks: 1st, With distillery milk, obtained from the distillery at Blissville; 2d, With milk from cows fed mainly on grain; 3d, Garbage milk, or the milk from cows fed on table refuse; 4th, Park milk, obtained warm from the herd at Prospect Park; 5th, Milk from Rushmore's depot; and 6th, Milk from an ordinary second-hand corner grocery among the tenement houses. The first four specimens were obtained *directly* from the cow, at the morning milking, the experiments beginning at 9 A.M. Rushmore's milk was drawn on the afternoon of the preceding day in Queens Co. Grocery milk from Orange Co. (?) was the morning milk.

Rushmore and Park milk threw up same quantity of cream; grocery and grains nearly as much; while distillery milk gave twice as much cream as garbage, and four times as much as the grocery. The reaction in all was slightly acid. It will be remembered that it has been contended that good milk should be alkaline, or neutral. It is now known that a slight acidity, or faint alkalinity, is not out of the way. Decided acidity shows fermentation, while strong alkalinity shows the milk to be doctored or diseased.

Specific Gravity.—At 60° F., grocery milk stood 100 by lactometer; distillery, 95; Rushmore's, 105; grains, 102; garbage, 88, and Park, 110.

Time of Separation of Ingredients.

Grocery.—On Fourth day, little whey, upper half in tube separating, lower half solid.

Distillery.—Two-thirds whey, separated in 24 hours.

Rushmore's.—Five days separating in flocculi, little whey.

GRAINS.—Same as Rushmore, with more whey.

GARBAGE.—In four days, long, putrid, flocculent masses.

PARK.—On fifth day, just beginning to separate.

In a second set of experiments whole milk was compared with milk diluted with water.

DISTILLERY.—Whole, in open filled bottle, acid in four hours, separated in 18 hours. Whole, in closed filled bottle, the same.

GROCERY.—*Both* lobbered in 17 hours, separated in five days.

GRAINS.—*Both* lobbered in 17 hours, separated in 21 hours.

RUSHMORE'S.—*Both* lobbered in 17 hours, separated in 25 hours.

PARK.—*Both* in 17 hours acid, lobbered in 21, separated in 33.

GARBAGE.—*Both* separated in 17 hours.

DILUTED WITH WATER.—One-half, one-third, one-fourth and one-fifth, distillery, in four hours acid; respectively, one-half, one-third, one-third and two-thirds whey, separated in 13 hours.

GROCERY.—*All* sour in 17 hours, separated in 22 and 42 hours, four days and four and one-half hours.

GRAINS.—First three separated in 20 hours, one-fifth water in 25 hours.

RUSHMORE'S.—First separated in 24 hours, rest in 30 hours.

PARK.—*All* separated in 21 hours.

GARBAGE.—*All* separated in 20 hours.

Lime-water added in proportion of one-half, one, two and three teaspoonfuls to milk two ounces, did not delay souring.

We conclude that if cow's milk does not agree it is owing:

First. To some inherent or acquired cause in the child.

Second. To the natural condition of the milk.

Third. To some acquired condition—by fermentation, putrefaction, growths or adulteration.

It is not chimerical to hope that Boards of Health, Medical Societies, Societies for the Protection and Care of Children, will, in the future, give as careful attention to the feeding of children as stock-raisers throughout the country are bestowing upon the foddering of cattle.

DISCUSSION.

——DR. BURGE.—Dr. Walker has done well in calling attention to the fact of the great variableness of milk, even when pure; and by calling to mind the large number of causes which occasion variations even in the product of one and the same cow. This helps to answer the often recurring question of "one cow's milk." The mixed milk of twenty cows is likely to be more uniform than that of one cow. It is evident that care is necessary to distinguish good from bad milk; a

casual examination is not enough. Fresh warm milk is most easily digested, but that the "life principle" of the paper has anything to do with it, Dr. B. denies. Where cow's milk constipates, he advises the addition of cod-liver oil or oleo-margarine, if it can be obtained pure, or the use of molasses as sweetening, instead of sugar. The tendency at present is towards the use of whole milk. Dr. B. has used condensed milk after the method of Dr. Chapman, as given on page 4 of this issue, increasing the proportion of milk from one part to 12 of water to one part to 10; objects to the use of the spoon as a standard of measurement.

——Dr. Chapman.—We must distinguish the kind of feeding necessary under eight months of age, from that of a year or 16 months. What will suit late will not suit early. The writers appear to make no such discrimination. Milk is the natural food; but if gelatine, glycerine or patent foods are added, it ceases to be natural. What the infant wants is food, and not medicine. If possible, decent sanitary surroundings should be secured, then, with pure milk, it may survive the dangers of artificial feeding. My plan, as described on page 4, has been more satisfactory than any previously tried; it does not disturb the child's stomach; but the practitioner must be content to withhold his pepsin and medicines of all sorts for the time being. To children over eight months cow's milk may be given; and to prevent the precipitation of caseine something may be added, as barley or farina water. The condensed milk that should be used is that which is sold from carts; the canned milk is an abomination on account of its excess of sugar.

——Dr. Hawley.—In all this contrariety of professional opinion, is there no principle worthy of being followed? Has science yet done nothing for us? If not, let each man cut out his own path for himself. But there are principles which may be here employed. If there is any certainty anywhere in medicine, it is in physiology; and if any part of physiology is certain, it is the processes of nutrition. With the exception of the bile, the operation of all the digestive juices is known. Where nature offers a diet the whole article should be taken; and there should be no attempt to select elements from it. Milk is a natural diet, and it should be used entire. The same of beef and the cereal grains. All parts of these foods are necessary to a perfect nutriment; so of milk, there is nothing in it that is not essential. Deprive it of fat and you prevent the digestion of other elements, as well as rob the nervous system of its sustenance. So with the other components. Dr. H. agrees with the paper in the belief that in fresh milk there is a life principle, which, in an unexplained way, facilitates its digestion.

——Dr. Mattison.—A feeble child, requiring to be fed artificially, had been ordered one part of pure cream to six of water; child improved upon this pretty rapidly, and survived.

——Dr. Mitchell.—Have tried all kinds of food, with variable results. That which has been most beneficial has been condensed milk, largely diluted with water of barley, gelatine, etc., with lime-water. Milk fresh from the cow is best, and where possible the influence of country air should be added. There can be no question that when milk has once become cold it is never again the same. It is impossible to foretell on what a child will thrive—sometimes it will be sugar pure and simple; sometimes clear butter; and after that some one of the prepared foods. Borden's condensed milk has always been good. That sold from the wagons is to be preferred, although the canned milk has been satisfactorily used in some cases, where neither good cow's milk nor wagon milk could be obtained. In reply to a question by Dr. Segur, Dr. M. had not, as a rule, found the interdiction of milk by Vogel in the enteric diseases of children necessary in practice—only in exceptional cases.

——Dr. Raymond.—The caseine of milk is a complex substance, not yet understood. There may yet be found in cow's milk the same kind of caseine that exists in human milk, which agrees with the infant stomach; and this may be separated from the other elements that disagree. Dr. R. spoke of the means of testing milk, and advocated the reliability of the lactometer. This instrument, with examination by the eye and taste, will detect all probable adulterations of milk. The instrument, however, should be tested, and the temperature of the milk should be accurately known and compensated, if above or below 60 deg. Fahr.

——Dr. Skene.—First, as to the composition of the various artificial foods ; these have been put in the books, and we are supposed to know how to find out about them. Secondly, the collection of a variety of opinions of individuals, and the accumulation of formulæ. We have an ample supply of these already, and not in this way will we get at the perfect food, any more than we can thus get at the perfect cure for whooping-cough. This is studying from the wrong stand-point. Thirdly, what is needed is clinical observation, giving the tests of our successes when we succeed, and the tests of our failures when we fail. No one food will agree in every case. Adults differ on the question of lobster salad, and the same man is not always in the same mind as to that form of diet. Still more do infants differ from time to time, and between each other. We cannot expect a universal food. Have tried Dr. Chapman's formula enthusiastically, but all trouble is not over yet. In fact, there are some children who have a congenital dyspepsia, and no food agrees with them. Then the right food may be directed and it may be bunglingly administered. Some will die, even on the diet of Dalton, who "has yet to see" equal parts of

barley-water and milk fail. Dr. Skene spoke of an infant, one of a family of six, which persisted in doing well on a starch diet, when nothing of a more physiological kind would be tolerated.

——Dr. Wight agrees with the views of Dr. Hawley on the question of whole milk, but he adds a little of the water of the soil, for the sake of its mineral ingredients, sodium, potassium, magnesium and lime. Sugar is to be added. As to the condensed milk, the old adage holds good, What is one man's food is another man's poison. He has been informed that it is now the practice to skim the milk at the factories for milk-condensing.

——Dr. Bell.—The subject of diseased cows has been ardently studied abroad; the latest views are now to be found in Fleming's Veterinary Surgery. The evidence goes to show that confined cows become tuberculous, and by their milk convey tubercle to the lower animals and to human infants. In the latter it produces first an intestinal catarrh, and then the mesenteric glands become involved. In city stables Dr. B. believes that consumption is almost universal, even among those that are high-priced, long milkers. He has been present at post mortems of certain cows in this city where the pulmonary disease was extensive. The milk from such animals is particularly injurious, and the lactometer is utterly incompetent to determine the condition. Boiling is not certainly destructive of this source of infection, according to some observers.

In reply to a question of Dr. Skene, Dr. B. gave his belief that this tuberculous milk had an infective power, over and above that which other imperfect foods have for occasioning tuberculosis. Dr. Skene opposed this with the belief that tubercle cannot thus be inoculated by or through the intestinal canal.

——Dr. Potter.—There is room for fallacy in these experiments upon inferior animals, for the simple reason that confinement is necessary, which is well known to be of itself a cause of consumption. A wider and more cautious record is necessary, especially with regard to the calves of tuberculous cows; for these calves can be observed under conditions more nearly natural.

——Dr. De Bowes.—Confinement does not always produce consumption. He had known many animals to be confined for the purpose of fattening; these did not become tuberculous.

——Dr. Pine believes that the American milk, as at present manufactured, is preferable to other brands; it is not boiled—it is therefore thinner and in other respects more like the fresh milk.

——Dr. Walker, at 10.20, closed the discussion. Complaint has been made that the paper contained none of his own views. This was de-

signedly the case, as he expects in book form soon to publish his views. One point is evident from the discussion, and that is that the best men have had a varied experience in the matter of infant feeding. He had a high opinion of the investigations brought out by Dr. Bell, and added that the cows in the city which die of distemper are, as a rule, consumptive.

In answer to Dr. Burge, he said that though there was an apparent discrepancy between the amount of cream found by Dr. Edward Smith and himself in distillery milk, that the cream, though abundant in the specimens examined, was thin, with poorly cohesive globules, and so could not well be used in making butter.

His experience with condensed milk pointed to a dilution more often than with plain cow's milk, and in children under four months even diluting with 20 parts water. The necessity for dilution in its digestion —and the constipation resulting from the use of condensed milk—arise from the excess of lactates present and the greater density of this milk over uncondensed.

As to dilution of milk with water, it would be well to see that the water was free from organic matter.

The doctor could not agree with Dr. Skene, that the accumulation of the views of different men throughout the country was of no value. The views of the best authorities had been given, and much information could be obtained as to the varied experiences of representative men.

To tabulate the results of different modes of feeding would be almost an impossibility, as we are rarely certain, even in private families, that well-planned directions are carried out.

As bearing upon the subject of tuberculosis contamination, he referred to a practice quite prevalent in the outlying stables of the cities, of binding a piece of diseased lung from a cow dead of distemper (as a preventive) into a cut made in the tail of a cow beginning to droop.

His own conclusions upon the subject are: First, to give whole milk if possible; if not, then with barley or oatmeal water. Third, *good* plain milk and aq. calcis. Fourth, if good milk cannot be obtained, then condensed milk with barley, oatmeal or aq. calcis.

The Anatomist.—Medical men will recall the masterly painting by Max at the Centennial. The excellence of the conception, and the perfection of the artistic work, were universally commented on. R. Berendsohn, of 48 and 50 Nassau St., N. Y., publishes a fine copperplate of this masterpiece, which, from its appropriateness, and the low figure at which it is sold, will, without doubt, find a large sale among Physicians. The price is $1.25 on India (tinted) paper, and $1.00 on cream white paper.

THE NEW YORK PHYSICIANS' MUTUAL AID ASSOCIATION.

THE STANDING COMMITTEE on "The New York Physicians' Mutual Aid Association" respectfully submit their annual report, as follows:

The total number of members during the year was	338
Died	7
Dropped from the list for non-payment of dues	5
	12
Present number	326

Of these, 80 are resident in Brooklyn. Of the 7 deaths, 2 were of Brooklyn members—namely, Drs. Horatio S. Smith and Ulric Palmedo.

The Association has received from assessments during the year $2,572.32, and has disbursed to heirs of deceased members $1,575.

The expenses of the business of the Association for the year were $146, which is about 5 per centum of the assessments collected.

With no salaried officers, and the free use of the council-room of the Academy of Medicine, where the meetings of the Board of Trustees are held, the main items of expense have been for printing, postage and special services.

As a matter of interest to members, a concise statement of the total receipts and expenditures of the Association since its organization in July, 1868, is appended:

Total amount of assessments collected	$14,202.00
" " paid to families of deceased members	11,740.00
Donated to Permanent Fund or passed to account of Contingent Fund, as required by By-laws	2,462.00
Total expenses since July, 1868	1,038.87
Permanent Fund now amounts to	3,777.25

It will be seen from the above statement that the Association is in a healthy financial condition; that a large amount of money has been collected and disbursed; that the distribution is prompt and satisfactory; and while all possible economy is practiced in the items of expenditure, the permanent fund is slowly but surely increasing.

The objects of the Association are stated in a few words in its Eighth Annual Report, to wit: To assist the family of a deceased member immediately after his demise, and to give support to members who may become reduced or suffer from want.

The general recognition among the intelligent and provident of the uses of Life Insurance, the wide adoption by guilds and classes of business of the mutual aid system, which has an established experience of security and economy, based both on the active working ages of the membership, and the fact that the assessments paid into the treasuries of these associations—all but a minimum tax for certain unavoidable expenses, nothing for salaries—is again disbursed for the benefit of members; these general considerations commend the Physicians' Mutual Aid Association to the attention of the members of this Society.

In particular, your committee desire to testify, as some of them can from personal knowledge of the work of this Association from its foundation, that it has been and is efficiently and faithfully served and supervised by its officers and committees.

A list of these are appended to this report, and their names and well known character are not better securities than is the conscientious regularity with which they attend to their official trusts, including the finances of the Association.

The expenses of the Association, a smaller per centum than any Life Insurance Company, would be still smaller, relatively, if all the physicians of New York and Brooklyn who should be members would become so. The Report already quoted says:

"It will be seen that the list of members is not as large as might have been reasonably expected, considering the number of practitioners in the city and its immediate vicinity. But it must be remembered that scarcely any effort is made by the members themselves to increase their number, that duty being left seemingly to the officers solely. The objects of the Association are so laudable, that all should feel sufficient interest in the Association, to impel them to further its sphere of usefulness, at least to the extent of advocating its claims and increasing its members."

Your committee respectfully and earnestly adopt and urge these views upon this Society.

They also recommend that a committee of sixteen be appointed by the President to solicit and receive applications for membership, and that the Society, by its vote of adoption of such committee, intend to commend the Physicians' Mutual Aid Association to all its members.

The manner of gaining admission to the Association is very simple. All that is required is the filling up of an application (blank forms may be obtained from the Secretary), duly endorsed by two members of the Association. Its presentation is followed by prompt action on the part of the Board of Trustees. The initiation fee is only $2, and the assessment on the death of a member $1 or $2, according as the applicant is under or over fifty years of age at the time of admission.

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NEW YORK.	BROOKLYN.
D. M. STIMSON, 1876–81.	A. J. C. SKENE, 1874–79.
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R. A. BARRY, 1873–78.	

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NEW YORK.		BROOKLYN.
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JARED LINSLY, 1874–79.	

ITEMS.

——METAPHYSICAL MEDICINE.—A prominent homœopathist, lately practicing in this city and now the editor of the *National Quarterly Review*, Dr. D. A. Gorton, is credited with having, in all soberness and good faith, advised the following: "Sulphur is efficacious in obstinate contumacy, and in sin, original and acquired; chamomile in a fretful, feverish disposition; belladonna in certain forms of temper diseases; hyoscyamus in jealousy; nux vomica in malice, and stramonium is good in cowardice."

——SURGEON-GENERAL BEALE is about to retire from his position at the head of the naval medical bureau. Dr. C. J. S. Wells, who about ten years ago resided in this city, is said to be slated for the succession.

——AN IMPOSTOR, who has been operating in Philadelphia, especially among physicians, may be expected in other cities in due time. The *Med. Times* gives warning of a sleek, plausible little fellow, who seeks to palm off fine photographs as india-ink sketches made by himself for the Centennial. He speaks fluently of eminent physicians in different States.

——THE BURNING OF THEATRES, and other accidents to public buildings, have been made the subject of historical inquiry by Dr. Toner, of Washington. He has published a pamphlet setting forth many practical suggestions for the prevention of calamities like that lately here experienced.

——DR. JACOB D. WOODRUFF, for many years a resident of Brooklyn, died at 436 Grand Avenue, on February 12th. The cause of death was a pneumonia contracted while professionally employed.

——DR. JOHN BLENNERHASSET, for more than twenty years a family practitioner in the Eastern District, died February 14th. His medical education was acquired in Dublin. His age was 76 years.

——DR. SAMUEL JEFFREY died in this city, February 15th. He had resided in this city about two months. He had until recently lived near Chicago; he was in the 86th year of his age.

——VACCINATION DURING INCUBATION OF SMALL-POX.—Dr. W. M. Welch, physician to the Philadelphia Small-pox Hospital, publishes fifty cases of the above. He premises his paper (*Phila. Med. Times*) with an opinion of the non-efficacy of the hypodermic use of vaccine lymph as remedial to variola. One-fifth of his cases were perfectly protected; one-half not protected; the others partially protected: deaths, sixteen. His cases, he thinks, warrant him in controverting the statement of Curschmann (*Ziemssen's Cyclopædia, art. Small-Pox*), that vaccination during the stages of invasion and incubation has no prophylactic power.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 368 Fulton Street.

The March meeting will be held on the 20th, at which there will be presented the following papers:

The condition of the Pupil in Disease, by Dr. J. C. Shaw.

Reports of cases by Dr. G. Wackerhagen:

1st. A case of Plastic Surgery.
2d. Ligature of the femoral artery for Popliteal Aneurism.
3d. Resection of the Hip-Joint.

A supposed case of Melancholia, by Dr. J. J. Lamadrid.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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(1874 to 1878.)

Drs. J. S. Prout, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. L. Zabriskie, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

FOR DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

The next convention is to be held in Chicago, June 5th, 1877.

Drs. Baker, Bodkin, Burge, Byrne, Drs. Fearn, Hawley, Hutchins, Hutchison, Drs. Kuhn, Pilcher, Reese, P. L. Schenck, Drs. Segur, Vrooman, Zabriskie.

COMMITTEES OF THE SOCIETY.

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Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

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W. G. Russell, cor. S. 9th & 5th Sts.
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Chas. Jewett, 310 Gates Ave.
R. H. Stone, 178 Jay Street.
Chas. H. Giberson, 96 Clinton Ave.
P. M. Nichtern, 68 Degraw Street.
Wm. W. Reese, 193 Joralemon St.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, MARCH 20, 1877.

THE CONDITION OF THE PUPIL IN DISEASE.

BY J. C. SHAW, M.D.

Frequent inquiries addressed to me of late as to why the pupil is altered in a given pathologic condition, have led me to believe that possibly a short paper, embodying the most prominent points in relation to our knowledge of that subject, may be of interest.

The knowledge which we at present have on the subject is comparatively limited, owing to certain imperfections in physiology and from the want of accurate clinical records; but I think we have enough data to be of interest, and to serve as a guide for future observation.

Briefly, the structure of the iris is as follows :

A membrane composed of three layers.

1st. An anterior, composed of a simple layer of epithelial cells.

2d. A median layer, composed of muscular fibres, blood vessels, nerves and stroma.

3d. A posterior layer, composed of pigment cells.

The median layer contains the circular and radiating muscles, the so-called sphincter and dilator muscle of the iris.

The arteries are the long posterior and the anterior ciliary, which are remarkable for the thickness of their coats, especially that of the adventitia (Arnold).

The nerves are from the ciliary nerves of the choroid, which, after entering the iris, divide dichotomously to form a plexus, and give off, according to Arnold, three orders of fibres :

1st. Pale fibres, which form a very delicate network in the dilating muscle.

2d. Medullated fibres, considered by this author as sensitive, ramify on the anterior face of the iris.

3d. Fibres rendered to the sphincter of the pupil.

It therefore receives motor, sensitive and vaso-motor fibres.

The movements of dilatation and contraction of the pupil occur under a great variety of circumstances. Medicines produce contraction or dilatation. The excitation of motor or sensitive nerves affect it. The excitation of certain regions in the cerebro-spinal system. Irritative or paralyzing lesions of the great sympathetic. There are also alterations during certain physiologic conditions ; such as great muscular effort, violent movements of inspiration and expiration.

The physiology of the pupil, connected directly with normal vision, will not be considered.

The movements of the iris are dilatation and contraction, and these movements are not instantaneous, but occupy a certain length of time in their performance.

Both pupils act together.

There are three principal views as to the nature of the movements of the iris.

1st. Supposing the movements to be of a muscular nature, and admitting the existence of two antagonistic muscles, supplied by different nerves.

2d. Theories admitting only one muscle, the sphincter of the iris.

3d. Theories which explain the movements of the pupil by changes in the calibre of the vessels.

Avicenni, Ruysch, Boerhave, Winslow and Whytt suspected that the tissue of the iris was of a muscular nature ; but they gave no demonstrative proof.

Maunior (1812) demonstrated two orders of muscular fibres, on an iris macerated in water—radiating fibres and circular fibres. This was confirmed by Valentin, Kolliker and others.

Whilst the microscope demonstrated the existence of two orders of fibres, of muscular nature, the experiments of Fowler, Reinhold, Nysten and Longet demonstrated its muscular nature, and the presence of

two muscles, by their contraction under electricity, Longet, in 1839, experimenting on the eyes of horses and oxen.

Weber (1851), Kolliker (1854) and Engelhardt gave still stronger demonstration of the existence of two muscles, under the application of electricity; and that there were two muscles acting in opposition.

The best description of these muscles, in man, has been given by Henle, and more recently by Iwanoff.

In 1823 Herbert Mayo had demonstrated that these two muscles were innervated by different nerves; he showed that the contraction of the pupil was due to the third nerve, and that after its section the pupil is dilated, whilst that excitation of the peripheric end of this nerve, in the cranium, causes contraction of the sphincter. This discovery has been confirmed by Budge, Vulpian and Longet.

As far back as 1727, Pourfour du Petit had shown that section of the cervical sympathetic produced contraction of the pupil, and Biffi (1844) showed that after section of the cervical sympathetic, if the superior end be galvanized, the pupil dilates.

At the same time that Biffi had shown that galvanization of the superior end of the divided cervical sympathetic causes dilatation of the pupil, Hall began to doubt the existence of a dilating muscle, and brought forward a new theory; he admitted only the sphincter, and that its action caused contraction of the pupil, and the cessation of its action allowed the pupil to dilate; that the dilatation was a passive act, and not an active one.

This theory was adopted by Rouget, Letherby (1859–60), Rogow (1869) and Gruenhagen (1866–67).

In 1873 Gruenhagen held the same view, believing that there is but one muscle.

Mèry, Sæmmering, Ferrein and Bichat believed the iris to be an erectile tissue. Grimelli, a partisan to the vascular theory, tried to prove it.

In 1840 he injected colored oil into the ophthalmic artery on a dead child, and produced contraction of the pupil. Caddi (1846) and Charles Rouget have also seen contraction after injection of the ophthalmic artery.

Brown-Sequard and Whytt have not obtained any contraction. Brown-Sequard was the first to observe that if they suspended an animal by the hind legs, that they obtained contraction of the pupil comparable to that which is observed in section of the cervical sympathetic.

Recently Mosso (1875), an Italian, working under Ludwig's directions, claims, from experiments performed by him, that all medicines which produce contraction of the blood vessels cause dilatation of the pupil, and those which relax the walls of the vessels cause contraction

of the pupil. Mosso has invented a special instrument for determining the differences which occur in the quantity of the blood in the extremities, and he claims that during all excitations, all moral emotions, which cause contraction of the vessels, there is dilatation of the pupil.

Alt, studying the time necessary for the production of the movements of the iris when its nerves are excited, has established, by galvanizing the sympathetic in rabbits, that the dilatation of the pupil occurs before the contraction of the vessels.

I will now speak of the influence of experimental lesions on certain regions of the nervous system.

In 1823 Herbert Mayo showed that section of the third nerve inside the cranium caused dilatation of the pupil.

This has been confirmed by many others since.

Intracranial section of the fifth nerve has been studied by Charles Bell, Herbert Mayo, Magendie and others. They observed contraction and immobility of the pupil, with subsequent inflammation and destruction of the cornea. Bernard observed the following, after section of the nerve :

1st. Immediately after section of the nerve, marked contraction of the pupil of that side.

2d. A short time after, about half an hour, dilatation of the pupil; but the pupil always remained smaller than that of the opposite side. It has been known since the beginning of this century that section of the sympathetic in the neck is followed by contraction of the pupil.

At a more recent date these experiments have been repeated by Bernard, Budge, Waller, Brown-Sequard, Vulpian and Schiff; each observer showing that section of the cervical sympathetic is followed by contraction of the pupil on that side, and redness of the ear and side of face ; increased temperature, enophthalmus and deformity of the palpebral opening; that galvanization of the superior end of this divided nerve causes the previously contracted pupil to dilate.

Budge and Waller recognizing that section of the cervical sympathetic was followed by contraction of the pupil, they sought to determine from what part of the nervous system the iris received its innervation through the sympathetic. They therefore exposed the cord of a rabbit, and galvanizing it, they found that at a certain point in the cord dilatation of the pupil occurred; this point is situated between the sixth cervical and third dorsal inclusive; to this region they gave the name of the ciliospinal centre.

This centre has been confirmed by other physiologists.

Irritation of a sensitive nerve—the sciatic, for instance—causes dilatation of the pupil.

Irritation of any sensitive nerve may produce this. Destroying lesions of the optic nerves produce total blindness and cause dilatation of the pupil. Destruction of the corpora quadrigemina causes blindness and dilatation of the pupil.

Ferrier, in his researches, has determined certain centres in the brain which cause alterations in the pupil.

In the monkey he determined that galvanization of the posterior half of the superior and middle frontal convolutions caused the eye to open widely, the pupils dilate, head and eyes turned toward the opposite side.

Electrization of the anterior and posterior limbs of the angular gyrus, causes movements of the eyes towards the opposite side, with an upward and downward deviation, as the electrodes are placed on the anterior or posterior limbs of the gyrus. The pupils generally become contracted. If the electrodes are placed on the superior temporo sphenoidal convolution, there is pricking of the opposite ear; head and eyes turn to the opposite side; pupils dilate widely.

We deduce from these brief but prominent facts the following: that the action of the pupil is mainly that of a reflex nature.

Which reflex action follows mainly the following paths:

1st. The reflex paths through the optic apparatus.

Impressions made on the optic nerves are transmitted to the tubercular quadrigemina, and back on the third nerve to the pupil, in a precisely analogous manner that it occurs in other portions of the spinal cord. I say other portions of the spinal cord, because, physiologically, this is only the intracranial portion of the cord with its nerves.

Then we may have a reflex action, starting in an irritation of any part of the body, which may pass through the spinal cord to the third nerve, or through the cilio-spinal centre on the sympathetic branches to the iris.

Diseases in which there may be present alterations of the pupil.

In considering lesions of the cerebrum, for the sake of brevity, I shall group together the following lesions, which act through pressure or destruction of tissue.

Cerebral hemorrhage; if great, tumors, aneurisms of large arteries, abscess, softening. In any of these pathologic states we may have alterations of the pupil, and usually dilatation, due to pressure, direct or indirect, on the third nerve. If the lesion be unilateral, we may have only inequality of the pupil.

Hemorrhage into the ventricles usually causes myosis. In those lesions to the encephalon which act suddenly, such as large hemorrhages into the cerebral mass, shock or concussion, in which we have a violent disturbance of the histologic elements, we have dilatation of the pupil—

in the first form, pressure as well as abolition of function; in the second from abolition, more or less great, of the function of the whole encephalic mass, as is shown by the resolution, etc., immediately accompanying these accidents.*

In injuries to the skull, causing fracture at the convexity, with or without hemorrhage, we may have dilatation from three causes, ordinarily:

1st. A certain amount of shock or concussion attendant upon the blow.

2d. The irritation of the bone or hemorrhage upon the meninges.

3d. From the pressure that may be made upon the encephalic mass.

In fracture at the base, with or without hemorrhage, like fracture at the convexity, we have a certain amount of concussion, and then we have direct pressure on the third nerve, from displaced fragments of bone, or hemorrhage. Hemorrhage, or softening in the crus, interfering with the third nerve, causes dilatation of the pupil and ptosis on the same side as the lesion, and opposite to the side of muscular paralysis.

This would also be the case in tumors pressing on the crus. In hemorrhage, or softening in the pons, most of the time there is mydriasis; but sometimes myosis.

These pupillary alterations are of both sides; but there may be dilatation of only one pupil, and then this is on the side of hemiplegia, in ordinary cases, and on the opposite side in alterne paralysis.

In lesions of the cerebellum, the records as to pupillary alterations are very imperfect.

In a case of tumor of the cerebellum which I had the opportunity of observing with Dr. Seguin, there was no alteration of the pupil, other than that connected with the lesion of the optic nerves.

In acute meningitis we may have, at the very beginning, myosis from irritation of the third nerve; but very soon we have mydriasis, from pressure due to the exudation which takes place.

The same occurs in chronic meningitis, of simple or tubercular nature.

In basilar meningitis, which is usually syphilitic (but not always, for there is a traumatic basilar meningitis), we may have paralysis of the third nerve, one or both, from pressure of the thickened basal meninges.

Lesions of the tubercular quadrigemina cause dilatation of both pupils.

If only one tubercle be destroyed, blindness occurs in the opposite eye; but both pupils contract to light, as the integrity of one optic tubercle is sufficient for both pupils; but the action of the pupil is the most marked on the side of sound eye.

* When paralytic dilatation of the vessels follow on inflammatory processes in the brain or meninges, we may have myosis.

There are certain centres in the cerebral cortex, the destruction of which, by whatever pathologic condition, will probably cause alterations of the pupil. I refer to the recently-determined sensory and motor centres, of which I spoke in a previous portion of this paper.

The great interest and importance attached to this subject will be my justification in diverging for a few minutes to consider this subject.

The localization of motor and sensory centres in the cerebral cortex, first foreshadowed by that most able of clinical observers, Dr. Hughlings Jackson, of London, and located experimentally by Fritz and Hitzig, and recently by the more precise experiments of Carville and Duret on dogs, and Ferrier on dogs, jackals and monkeys, are of great interest, as clearing up old points in the physiology of the brain and establishing new ones. To determine that these centres do really exist in man—and to my mind I see no reason to suppose they do not—is to do so in pathologic cases in man.

And such confirmation having been made for certain centres, I feel justified, even at the risk of being a little premature, in including these centres for the pupil in my paper.

In October, 1876, M. Pitres communicated to the Society of Biology of Paris observations made in the service of Charcot, on the secondary degenerations of the cord, which are observed in lesions of the cerebral cortex. These observations show—

1st. That every lesion of the brain, of whatever extent, if without the motor cortical zone, cannot produce these secondary degenerations of the cord.

2d. That a lesion, even of very slight extent, occupying the motor points of the cerebral cortex, causes this descending secondary degeneration.

In July, 1876, M. Luys communicated to the same society the following:

That when the sensibility of a region was suppressed for a long time, it produced reabsorption of the tissue of the brain, and in certain definite points. It will suffice to give one of his observations. A woman, who, twenty years previously, had had an amputation of the right limb; there was found a notable atrophy of the left descending frontal convolution.

To the Anatomical Society, in November, 1876, Charcot communicated the following: Atrophy of the superior part of the ascending frontal convolution and the paracentral lobule of the right side, in an individual who had suffered amputation of the left arm five years before.

These pathologic cases in man certainly confirm the functions which experimental physiology has recently pointed out.

In a case of softening of the medulla, in the service of Vulpian, the pupil of the right side was found slightly contracted.

In a case reported by Hallopeau, obliteration of the vertebral artery produced symptoms of glosso-labio laryngeal paralysis, and during life there was myosis of the right pupil.

Experimental physiology has shown that irritation of the cilo-spinal centre causes dilatation of the pupil, and that its destruction causes myosis.

Clinical observation proves that this is also the case in pathologic cases, whatever be the nature of the lesion. In locomotor ataxia, where we so often have diplopia, which is due to paralysis of the third nerve, brings with it mydriasis; but there are cases where no paralysis of the third nerve appears, and no mydriasis, but marked myosis as a prodromic symptom. In the few recorded cases of lesions of the cervical sympathetic, they have found, ordinarily, a contraction more or less marked of the pupil on the side of lesion, with symptoms of vaso-motor paralysis, increased temperature, redness, retraction of the eyeball, and deformity of the palpebral opening. But in some few observations of lesion of the cervical sympathetic, in place of a contraction there was dilatation of the pupil on the side of lesion; it is supposed by the reporters of these cases, that the dilatation was due to a slight compression of the nerve; but Vulpian appears to doubt this explanation, and asks, "Would it not be possible that in many of these cases the dilatation has been produced, not by a direct excitation, but by reflex excitation of the sympathetic fibres going to the iris?"

Gairdner (1855) reported a case of aneurism of the thoracic aorta, in which the pupil of the left side was more dilated than the right; the left side of the face presented cold sweating with redness. In another case of disease of the heart or aneurism, he observed contraction of the pupil on one side.

Panas (1864) reported the case of a man with tumor on the left side of the neck, the pupil being smaller on the left side than on the right, the conjunctiva and the ear and half of face on that side being congested. Mitchell, Morehouse and Keene report a case of gun-shot wound of the right side of the neck; the right pupil was very small and slightly deformed; slight ptosis; the eye appeared less large on the opposite side.

In a case of W. Ogle, in which there was a tumor of the right side of the neck, there was myosis, contraction of the palpebral opening, retraction of the ocular globe, and a notable redness of the conjunctiva, cheek and ear of that side.

In 1872 Seeligmuller reported the case of an officer, aged 25, who was shot in the left shoulder; the ball entering at the sterno cleido mas-

toid muscle, three centimeters above the clavicle, and passing out behind at the level of the fourth dorsal vertebra. There was paralysis of the arm, the pupil was smaller on that side; there was also vaso-motor and trophic disturbances.

Seeligmuller, in October, 1876, reported thirteen cases of traumatic injury to the cervical sympathetic. He divides the symptoms into:

1st. Oculo-pupillary, vaso-motor and trophic disorders.

The oculo-pupillary symptoms observed were: partial closure of the eye, contraction of the pupil, and enophthalmus in paralysis of the sympathetic. In those of irritation, there was observed widening of the palpebral opening, prominence of the orbit, and dilatation of the pupil. His ten cases of paralysis were: six gun-shot wounds, in one punctured wound; twice fracture of the clavicle; once a severe contusion of the region of the shoulder. The three cases of irritative trouble were due to contusion of the shoulder, once with and twice without fracture of the clavicle.

Lesions of the optic nerve, whether due to secondary degeneration, as in the case of tumor of the brain, from sclerosis, or from pressure due to meningitis, all causing atrophy of the nerve, we have, as the result, dilatation of the pupil; and which becomes greater as the atrophy becomes more complete, until it becomes incapable of transmitting impressions to its centre.

Lesions of the third nerve produce mydriasis, if it be a paralyzing lesion; but if an irritative lesion, myosis. I have already considered most of the lesions which may cause these alterations; but here we will consider syphilitic lesions.

It has been pointed out many times, and in a paper by myself, before this Society, the great frequency with which syphilitic lesions affect the cranial nerves, and more especially those of the eye, and above all the third nerve, producing complete paralysis, ptosis and dilatation of the pupil.

It happens sometimes that a paralysis of the third nerve occurs from cold, the same as we have in peripheric facial palsy; but the paralysis is usually not so complete and the dilated pupil not so great as in syphilitic disease; at least this was the fact in such cases as I have observed.

Mydriasis does not always follow paralysis of the third nerve, and this is explained by the fact that exceptionally a branch passes from the sixth nerve to the ophthalmic ganglion, and assists in regulating the pupil.

The oldest observation on record of the effect of lesion of the fifth nerve is that by Herbert Mayo, who saw a lesion of the left fifth nerve

in a man cause contraction and immobility of the pupil, inflammation of the eye, and ulceration of the cornea.

In paralysis, *á frigore*, they observe injection of the conjunctiva and contraction of the pupil ; the sensibility of the cornea is almost always abolished. In neuralgia of the fifth nerve myosis is often observed. Lesions of the sensitive nerves may cause mydriasis. The alterations of the pupils consecutive to impressions made on the auditory apparatus are of great interest, but are foreign to this paper.

During the crises of lightning pain, which patients afflicted with sclerosis of the posterior root zones suffer from, there is usually dilatation of the pupils.

At the meeting of the American Neurological Association for 1875, Dr. E. C. Seguin called attention to a myosis which was present in certain cases of injury to the brachial plexus, the myosis being on the same side as the lesion. This pupillary alteration resembles that which is seen in general paralysis of the insane. Dr. Seguin has observed two such cases.

This fact has been observed by only one or two observers abroad.

Dr. Hutchinson, of London, reported cases of traumatic injury to the brachial plexus, with myosis on the same side, and the other symptoms which accompany paralysis of the cervical sympathetic.

It has been determined by F. Roque that certain unilateral lesions cause inequality of the pupil, and that the largest pupil is on the side of disease.

This may occur in all the lesions of the lung—phthisis, pleuritis, pneumonia and pericarditis.

In disease of the cardio-vascular apparatus.

Whenever there is an obstacle to the afflux of blood to the brain, then we have pupillary dilatation.

We have it in syncope, in dilatation of the mesenteric vessels.

In sudden dilatation immediately following parturition, when the pressure which the distended uterus has exerted to keep the calibre of the abdominal vessels at a certain point, if no compensatory pressure be made, often it occurs that the patient becomes suddenly pale and faint, and there may be a passing blurring of vision and the pupils dilate; this may be observed in some patients several times by intermitting the pressure of the hand on the abdomen, until the vessels have time to recover.

This would also be observed in tapping for ascites, if the bandage were not applied.

In angina pectoris we have during the paroxysm dilatation of the pupil.

Giovanni (1875) has recently called attention to the myosis due to cardiac disease.

Aneurism of the aorta also produces alterations of the pupil, and at first it may be myosis, but later, when we have those severe pseudo-neuralgias which are its accompaniment, we may have dilatation.

Among the diseases recorded by Roque, in which there was inequality of the pupils, were various lesions of the lungs, bronchial and pericardial ganglia. A case of jaundice in which the pupil was larger on the right side than on the left.

Case of hydarthosis of right knee-joint; right pupil largest.

Epithelioma of right ear; right pupil largest.

Dental caries in a student of medicine, on right side; right pupil largest.

Abscess of right side; right pupil most dilated.

In cases of bubo following chancre, pupil widest on that side.

Case of subacute rheumatism of right shoulder joint; right pupil widest.

Injury to fore-arm of right side; right pupil most dilated. Burn of right leg; right pupil largest. Fracture of left leg; left pupil largest.

Unilateral lesions of the kidney, spleen and liver may cause inequalities of the pupil, with the largest pupil on the side of the lesion.

Lesions of the digestive apparatus in children, more especially intestinal parasites, may cause alterations of the pupil. Sometimes it appears that the pupil is enlarged on the side opposite the lesion; but this is more apparent than real, as the following case reported by Roque will illustrate.

A child six years old entered the hospital June 6th; left pneumonia; pupils unequal, left larger. On the 20th of June the inequality changes; right pupil largest.

At the autopsy they find a very recent arthritis of the coxo-femoral articulation. In malarial and eruptive fevers we have pupillary alterations.

In diphtheria we have sometimes mydriasis from paralysis of the third nerve, which may coincide with the paralysis of the palate.

In diseases and injuries of the testes and ovaries, we have dilated pupil on the side of lesion.

In hyperœsthesias of the various plexuses of the thoracic and abdominal regions, we may have pupillary alterations.

There are some mental diseases in which we have pupillary alterations.

In acute mania the pupils are contracted. According to Greisenger, contraction of the pupil in chronic maniacs is a grave symptom, as it foretells the passage to paralytic dementia.

In melancholiacs the pupils are widely dilated, and which, perhaps, is due to the fact that they are always in dread of some evil, frightened. We also have an enfeebled circulation.

In idiots the pupils are dilated.

Baillaiger (1830) first called attention to the diagnostic importance of inequality of the pupils in general paralysis.

Budin and Coijne have made a series of researches on the condition of the pupil during surgical anæsthesia. The conclusions from these observations are :

1st. That the administration of chloroform (and it is the same for ether) produces in the pupil a series of modifications, which are in connection with the state of the sensibility.

2d. During the period of excitation when this occurs, the pupil is dilated.

3d. After this period is passed, the pupil contracts progressively, remaining sensible to excitations.

4th. During the period of profound surgical anæsthesia, there is observed in the pupil two constant phenomena:

(*a.*) A state of contraction.

(*b.*) Absolute immobility.

There is a connection between the absolute insensibility of the patient, and the contraction with immobility of the pupil; between the return of sensibility and the dilatation with mobility.

5th. The state of the pupil can then, from the point of view of the sensibility, serve as a guide in the administration of anæsthetics.

6th. The slow dilatation of the pupil serving during the operation to indicate that the anæsthesia is less profound, and that the return to sensibility is approaching.

7th. During operations of long duration, if it is desired that the patient shall be completely insensible, the anæsthesia must be directed in such a manner that the pupils remain constantly contracted and immobile.

8th. Efforts at vomiting can produce dilatation of the pupil; the insensibility disappears and the patient awakes.

9th. It is important not to confound true anæsthesia with anæsthesia from asphyxia.

The last produces different modifications of the pupil.

If the patient be asphyxiated the pupil dilates rapidly.

As reliable as these pupillary modifications are, it must not be forgotten that the observance of the pupil is not all that is required in safe anæsthesia; the pulse, respiration and appearance of the face must be watched closely as well.

From what has preceded, we may conclude, with Roque:

1st. That in a large number of affections of the lung, bronchial and pericardial ganglia, inequality of the pupil is found.

2d. That the pupil most dilated corresponds to the side of disease.

(*a.*) If the two sides are diseased, the pupil the most dilated corresponds to the side of acute disease.

(*b.*) If the bronchial ganglia of one side are affected, this is the side where the pupil is most dilated, even when there is a lesion of the opposite lung.

(*c.*) If there is a pericarditis and an inflammatory lesion of the right lung, the right pupil would be most large.

3d. The inequality of the pupil at the commencement of the disease is generally not continuous.

From what has preceded, we are led to the following broad conclusions:

1st. That the condition of the pupil in disease may furnish us material aid in arriving at a diagnosis.

2d. That as an absolute diagnostic point it is not truly reliable, and this is readily understood when we consider that the variations of the pupil are due to reflex action, and therefore, as a rule, it can have no constant indication.

DISCUSSION

Dr. Wight: His experience was contrary to that of the paper in respect to cerebral concussion; the cases that he has seen have had the pupil contracted; does not remember an exception. So, too, his observations of compression were in favor of a dilated pupil. Is able to predict, from the pupillary condition, some of the conditions which a post-mortem will reveal. The human pupil is an unreliable pupil.

Dr. Shaw: I would not have the Society understand that I mean to say that contraction of the pupil never occurs; but that immediately on the reception of the injury, dilatation of the pupil takes place, and, if inflammatory action of the brain or meninges follow, then we may have myosis.

A CASE OF PLASTIC SURGERY.—LIGATURE OF FEMORAL ARTERY FOR POPLITEAL ANEURISM; RESECTION OF THE HIP-JOINT.

BY G. WACKERHAGEN, M.D.

I have the honor to present to the Society a report of three surgical cases which came under my care during the past year.

The first is a case of plastic surgery. The patient, aged 49 years, born in Ireland, by occupation a laborer, presented himself at the surgical clinic of the Southern Dispensary on the 4th of March, 1876.

He was suffering from eversion of the left lower eyelid, which resulted from an injury to the face received in September, 1875.

The wound having healed, an extensive cicatrix remained, which, by contracting, produced extreme ectropium, drawing the margin of the lid down to the prominence of the malar bone.

Having produced anæsthesia by chloroform inhalation, an incision one inch in length was made, to extend from a point about one-quarter of an inch below the outer canthus, obliquely downwards and inwards. The lower lid was then released, by dissecting under it nearly to its free margin. The lower portion of the cicatrix was also relieved from its attachment, leaving a space one inch long by one-half of an inch wide to be covered with new tissue.

Hemorrhage having ceased from the prepared surface, a portion of the integument from the outer surface of the fore-arm was removed, one inch and a half in length by one inch in width, and having been applied to the space in the cheek, was retained in position by strips of isinglass plaster. The dressing consisted of lint soaked in a mixture of olive oil, glycerine and carbolic acid. This dressing was covered with cotton batting and retained in position by bandages.

In five days the dressings were removed, and I was pleased to find that the piece transplanted had united by first intention ; the wound in the arm had also healed.

About three weeks after the operation, the man came to my office in a state of intoxication. He stated that he had been engaged in a street fight, and had received a blow in the face, almost directly over the place where the new tissue had been engrafted.

The inner edge of the transplanted portion was suppurating, but readily healed in a week under the carbolized oil dressing.

Since that time I have lost sight of the patient, and though he promised to allow me to present him for examination to other physicians, he always failed to keep the appointments. Drs. E. A. Whaley, Nathaniel Ford and Myers were present at the operation.

From the fact that repair and reproduction are much more limited in man than in the lower animals, the results of plastic operations have not been very satisfactory, notwithstanding the great advancement towards a more correct knowledge of the healing process.

It is not my purpose to weary you with a history of the art of plastic surgery, as I believe that you are all familiar with the method of operation practiced by Tagliaczzi, and also with the modifications and improvements by modern surgeons—*e. g.*, the Indian method of rhinoplasty introduced into Europe, by Carpue, in 1814, who improved upon the original method by adding a septum nasi and by the employment of sutures.

Now the question may be asked, Is it absolutely essential that the flap be taken from a portion of the integument in close proximity to the part destroyed; and whether its attachment by pedicle would contribute to the nourishment and adhesion of the transplanted tissue?

In an article republished in *Braithwaite's Retrospect*, January, 1876, from the *British Medical Journal* of September, 1875, Dr. Wolfe says: "From my observations in transplantation of structures from the lower animals, and in skin grafting as well as in plastic operations, I have long held it demonstrated, that in most cases the pedicle is not essential, if indeed it do contribute anything to the vitality of the flap."

We await more extended experience in this method of plastic surgery, before this theory can be considered correct.

Dr. Wolfe directs that the edges of the lower and upper eyelids should be united by sutures, also that the areolar tissue from the transplanted integument be removed.

In order to promote union by the first intention, the surgeon should first endeavor to improve the general health. He must exercise the nicest care and judgment in preparing the surface and edge of the wound for the reception of the transplanted tissue—which should be cut sufficiently large to allow for shrinkage—and should wait until hemorrhage has ceased from the wound before applying the new tissue; and I think it advisable to follow Dr. Wolfe's plan of raising the edges of the wound, in order that they may overlap the flap inserted. Sutures should be avoided when possible, and one should not be in haste to remove the dressing for the purpose of inspection.

The second case is one of popliteal aneurism.

Mr. H., aged thirty-five years, born in Germany, by occupation a machinist, experienced a sharp pain behind the knee-joint, while at work in the factory in December, 1875. Upon examining the part, he found a small tumor, which gradually increased in size until March, 1876, when it commenced to enlarge very rapidly, with distinct pulsations.

He consulted a physician, who applied wet cups; not being benefited thereby, he was advised to apply liniment. As the tumor continued to enlarge, he applied for treatment at a public institution, where flexion and compression were employed, but without benefit.

Mr. H. then consulted Dr. Schlatter, of this city, who requested me to visit the patient with him.

We found Mr. H. in a recumbent position, the affected limb flexed and supported by pillows. He was in a depressed state of mind, anæmic and emaciated. There was a large pulsating tumor situated in the right popliteal region, which extended transversely beyond the condyles of the femur.

The swelling having rapidly increased, and as the patient was suffering considerable pain, we concluded to ligate the femoral artery, in order to avoid rupture of the sac.

On the following day, Drs. E. A. Whaley, Schlatter and Watt being present, the latter gentleman administering the anæsthetic, the femoral artery was ligated just below the apex of Scarpa's triangle; pulsation in the tumor disappeared immediately after the operation.

The patient having been placed in bed, the limb was wrapped in cotton wadding and a hypodermic injection of morphine administered.

He complained of considerable pain along the outer side of the limb, which gradually disappeared. The tumors also decreased in size, and the wound healed by first intention.

In five weeks the patient was able to resume his occupation, very much improved in health and appearance.

The several methods of procedure for the treatment of popliteal aneurism are as follows, viz:

1st. The "Hunterian operation." In this operation the ligature is placed at some considerable distance above the aneurism.

2d. Wordrops' and Brostore's operation, which consists in placing a ligature on the distal side of the aneurism.

3d. The injection into the sac with perchloride of iron.

4th. Galvano puncture.

5th. The introduction of iron wire into the sac.

6th. Flexion of the limb.

7th. Manipulation.

8th. Digital or instrumental compression.

Of all the above methods of treatment, it has been decided by experienced surgeons that the Hunterian operation and compression offer the best prospects of success, flexion of the limb being only applicable in the treatment of small aneurismal tumors.

Of the other methods Mr. Holmes says: "It is useless to spend time in their discussion." In his System of Surgery, p. 558, he says: "Certainly the mortality after ligature of the femoral artery appears not to diminish, but on the contrary to increase, after the previous unsuccessful trial of compression;" and advises that the method of compression should be tried not more than one week, and if no considerable improvement take place, to tie the artery.

It is impossible at the present time to obtain reliable statistics from treatment by compression, for the reason that the method, when properly applied, is comparatively new, and also because it has generally been applied in mild cases.

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The third case is that of a patient suffering from hip-joint disease, on whom the operation of resection was performed.

Mary Breen, aged ten years, born in Ireland, was brought to the Southern Dispensary on the 25th of last September.

The patient was pallid, emaciated, without appetite, and complained of great pain at the hip and knee. The limb affected was about one inch and a half shorter than the sound one, and in a condition of anchylosis. There were six sinuses opening on the inner and outer surfaces of the thigh—its middle third—from which purulent matter was continually discharging. One of the sinuses could be traced to the hip-joint, and diseased bone detected with the probe. The shaft of the femur was also diseased.

The mother informed me that the girl had fallen down-stairs in October, 1874, bruising the right hip. The pain was quite severe after the injury, and the patient was sent to hospital, where she remained only a few days. She returned home and attended school, without any complaint, excepting a slight pain at the knee-joint.

In a few weeks the symptoms became more aggravated. The limb gradually became abducted, rotated outwards, and apparently lengthened. She was again sent to hospital, when the knee was painted with tincture of iodine. The pain continuing to increase, application was made for her admission to another public institution, where she was confined to bed for a period of six months. In the interval abscesses formed in the thigh, which opened at several places, resulting in the formation of six sinuses.

On the 8th of last November the head and neck of the femur were removed, which I present for examination. Drs. E. A. Whaley, Turner and Mr. Müller, medical student, were present at the operation.

The patient has been free from pain since that time, and is now able to walk comfortably without crutches. There is marked improvement in health and appetite, and five of the sinuses have closed.

The operation was performed in this case principally to relieve the patient from the exhausting pain—not with the expectation of removing all the diseased bone, the shaft of the femur being more or less involved.

In performing this operation, it is advised by some surgeons to remove the trochanter major in all cases, whether diseased or not, for the reason that it is liable itself to become subsequently carious, and that it offers an obstacle to the free discharge of matter.

By the improved system of drainage with rubber tubing, it would appear thar the joint cavity may be kept perfectly free from the accumulation of offensive collections. As to the danger of the trochanter major becoming subsequently diseased, I am unable to form an opinion.

Mr. Holmes, in his System of Surgery, says: "This plan seems to me to involve an unnecessarily extensive removal of bone."

With regard to statistics in this operation, I have been able to collect reports of seventy-five cases—six were adults and sixty-nine were children. Of the adults, one recovered and five died; of the children, thirty-nine recovered with useful limbs, thirteen were not benefited, and seventeen died.

A SUPPOSED CASE OF MELANCHOLIA.

BY J. J. LAMADRID, M. D.

Mrs. B. M. D., aged 56, a widow, and the mother of six children, and one miscarriage. Her father died of hemiplegia and her mother of typhoid fever. She was healthy and strong in her younger days, but had an attack of the same fever, from which she hardly escaped with life. She was married at 17, and when 23 had three children. Soon after marriage was for two years subject to chills and fever.

At this time she was living in Boston, where there was a religious revival (Methodist), in which she took a great interest. Unfortunately

for her future health and welfare, the excitement soon threw her into a state of worriment and fear, for she believed that her soul was lost. A morbid mental excitement, followed by nervous depression, was the result, which she has never been able to get over, notwithstanding the long intervals between each attack. Her first attack consisted of excessive nervousness and a certain anxiety and fear for her future, followed by a depressed condition of her nervous system. Insomnia was so troublesome that she was compelled to get up and walk the floor for hours at a time, until it was day-light. These symptoms were soon accompanied by dyspeptic ones—palpitation of the heart and a sense of coldness over her whole body, but no headache. This first attack lasted her about six weeks without any treatment. The second took place six years after, brought on by exhaustion caused by rapid increase of family and lactation. She consulted a physician, who prescribed tonics, etc., but with little or no benefit. Soon after she was taken to the White Mountains.

She felt better and stronger after her return. This attack lasted eight weeks. Another spell came on eight years after, produced by worriment and the death of a grown-up daughter. This attack was more severe than the rest and lasted about nine months. All the medicine she took was Hoofland's German bitters. Another attack, in 1859, was also produced by worriment and the death of her husband. She consulted Dr. Leedon, of Germantown, Pa., where she was then living. He prescribed something for her nerves and stomach, and told her to cheer up, and though this spell only lasted four months, she did not receive much benefit from the medicine. In 1864 she had another attack, caused also by sickness and the death of two grown-up sons, both dying within three weeks of each other. This severe and painful blow made her at once give up house-keeping, and, to forget her late troubles as much as possible, she went West to spend the winter. While there she was taken so badly with her old sufferings that a physician was called in, and ordered her tincture of valerian for her nervousness. In the spring she returned to Boston, and still feeling badly, was advised to consult a homœopath. He told her she was "off the track," and prescribed some sugar pills. As might be expected, she got no relief from his treatment. Soon after she returned to Germantown and consulted another homœopathic practitioner. His opinion was that she had mental dyspepsia, and prescribed accordingly. This attack lasted about fourteen months, longer than any of her previous ones, but it gradually disappeared. All the medicines she took were homœopathic. During this attack her physical and mental vigor suffered severely, so that it was many months before she recovered her former health and strength.

In 1871 she had another bad spell, lasting three weeks. This was produced by some mental excitement. For the first time she came under my notice. I prescribed simple bitter tonics, with quinine, strychnia and bromide of sodium, ten grains three times a day and thirty grains at bed-time. This treatment had the desired effect, for she apparently soon got well. In 1873, soon after hearing of the almost simultaneous death of a daughter-in-law and a grandson, she was again badly attacked, but recovered in about six weeks. She consulted me again, and put herself under my care. I then obtained, for the first time, all the facts above related.

Her chief symptoms have been mental, as well as physical. She feels low-spirited and greatly depressed. This is accompanied by excessive nervousness, and an irritable condition of her nervous system. When she is under these spells she lives in a state of fear and despondency, and when speaking of her sufferings often bursts out crying, and wishes to be dead, than be such a burden to herself and her children. At no time has there been hallucination, either of sight or hearing. She sleeps well (this is only since her attack in 1871) the first part of the night, but as soon as it gets to be 2 A. M., or thereabouts (except when she takes hypnotics), she is sure to awake rather suddenly and in a frightened state. As she lays awake on her bed (she does no longer get up and walk the floor, as in former attacks), she gets thinking about her late family, or any other troubles—and, what is worse, she will look ahead for more, and even worry of other people's trials and sorrow. In fact, she always looks on the dark side of everything; but whether she is so by nature, or her disease has something to do with it, I am not prepared to say—probably it has, for she assures me she always had been of a lively and cheerful disposition. She feels childish and foolish, and when told not to give away to her thoughts or feelings, she says: "My gloomy and sad thoughts will come, in spite of every effort I make to forget or not think of it." She has these thoughts soon after she awakes, and at no other time. This is probably due to the fact that she sleeps alone, and cannot talk to any one at that time of the night. She is also dreadfully annoyed by a sinking sensation at the pit of the stomach, and a rumbling noise of wind in the bowels. She complains of a sense of cold in half of the soles of her feet only, and sometimes the limbs too. At other times she feels a cold creeping and twitching sensation all over her body, but no pain either in the head or along the spine. (By a careful examination of her back, could not find any particular spot affected.) The pupils are normal, and their sensibility to light is also natural. Lately noise seems to annoy her very much, as it makes her feel more nervous and irritable. Next to her nervous symptoms, there is complete loss of

appetite, dryness of the mouth and flatulence. She tells me it is almost an impossibility to eat. To save herself trouble, she often takes food in a liquid form. There are no other dyspeptic symptoms, such as constipation, pain, weight or distress, except the formation of gases in the intestines. I made the diagnosis of a probable case of intermittent melancholia. On this occasion my treatment consisted of plenty of exercise in the open air, good nourishing and digestible food, and tonics, including pepsin, for the flatulence. Also hypnotics at bed-time, to produce sleep for the whole night. Her general health, previous to her attacks, has been more or less good, with, perhaps, one or two exceptions; but as soon as she is in one of them, her constitution and physical strength seems to fail fast and rapidly, or, as she tells me, she is "good for nothing."

In 1875 death in her family again brought on relapse, which lasted about seven weeks. Last March she had another severe spell, caused by worriment and sickness in the family, and by which she was very much prostrated and weakened. During this attack I advised her to spend the summer at the Catskill Mountains, where she stayed two months, with great benefit from the change of air, and plenty of fresh raw eggs and milk. On this occasion patient ceased taking any tonics, but kept on with her hypnotic mixture, which, finally, she stopped, as she grew stronger, and could sleep without it all night. Soon after her return (September) home she felt as bad as ever, and as yet she has not entirely recovered. The same month I took her to Dr. Hammond for consultation, who pronounced her case one of cerebral congestion of the right side. He applied the actual cautery to the nape of the neck, to be followed by a lump of ice every night over the burn till it healed up. Also that she should take plenty of exercise in the open air, either by walking, or driving for herself to be preferred; have everything cheerful around her, and go to amusements from time to time. For medicinal treatment he prescribed the following: Sodii bromidi, 1 oz.; Pepsinæ saccharatis, 3 drachms; Pulveris Lig. Carbo., ½ oz.; Extracti Ergotæ fl. (Squibb's) and Aquæ, 2 fluid ounces each. Misce ft. mistura. Dose, a teaspoonful, in considerable water, after each meal, and two at bed-time. The same day I saw also Prof. A. McL. Hamilton in consultation, who entirely disagreed with Dr. Hammond, and thought the case to be one of cerebral anæmia, rather than hyperæmia. His advice as to the management of the patient was very similar to Prof. H.'s, but his medicinal treatment was different, as shown by the following: Strychniæ sulph., 1 grain; Tincturæ Digitalis, 2½ fluid drachms; Acid Phosphates (Horsford's), ad. 4 fluid ounces. Misce. Sig. A teaspoonful in water before

eating. Also stimulants in the morning and at bed-time, such as Old Tom gin, etc.

In view of a doubtful and uncertain diagnosis all around, and knowing that Dr. Hamilton's treatment was very similar to what mine had been, I decided to give the patient the benefit of the doubt, and at once put her under Dr. Hammond's prescription. This she took faithfully for three weeks, without missing a single dose. By that time she became so fully under the effects of the bromide, as shown by its physiological action—but without producing the peculiar eruption attributed o that drug—that I was compelled to tell her to suspend taking the medicine during the day, but to continue with the two teaspoonfuls at bed-time. At the same time she reports herself as feeling much better—that is, she is not so despondent and is able to eat more, sleep all night through without awaking any, or, if at all, she goes to sleep again, so that in the morning she almost feels like herself.

In this condition she has been, more or less, up to the present—that is, she feels apparently well or better for awhile, and then will have a relapse at the least mental excitement or worriment. Lately there has been also noticed a change in her physical appearance ; she is pale and very much emaciated—she tells me she has lost nineteen pounds since last September—and although she has been losing flesh gradually for the last six years, she thinks she never lost it so fast as since taking Dr. Hammond's prescription, notwithstanding the benefit she derived from it the first time she took it. Her weight six years ago was 135 pounds, and last September 110, less nineteen up to nine weeks ago ; but since then she has regained ten pounds. This is doubtless due to an addition of a quart of milk daily to her regular diet, raw eggs in the morning, and a tumbler of milk-punch at bed-time. In the early part of December she left off taking the ergot, but still keeps on with the bromide at bed-time, and pepsin, etc., during the day. Her temperature has little or no deviation from the normal standard, and the pulse rather slow but full. Physical examination of the chest revealed no abnormal sounds, either of the lungs or heart, although at times there is an irregularity and increase in its action, due, perhaps, to anæmia and nervousness. Urine is about natural, except an increase in the excretion of the phosphates.

Remarks.—The patient has been treated in her different but similar attacks mostly by tonics and hypnotics, at bed-time and during the day, as circumstances required it. In addition to this, she was advised plenty of out-door exercise, cheerful society, and nutritious solid or liquid foods, as the case might be, or according to the stomach's condition. Among the tonics used, it will be noticed I have prescribed pretty near all the

principal ones of the materia medica, as shown by the following list: Nux vomica or strychnia, quinine and pyrophosphate of iron, syrup lacto calcii phosphas—the hypophosphites of lime and soda—dilute phosphoric acid and Horsford's acid phosphates, phosphide and valerianate of zinc ; also Thompson's alcoholic solution of phosphorus, in half drachm doses, three times a day. Some of the simple bitter tonics, lactic acid dilute, and pepsin, or the liquid pepsin of Scheffer's, were also given to help digestion and thereby promote the appetite. Charcoal, subcarbonate of bismuth, diluted nitro-muriatic acid, assafœtida and spirits of turpentine, were administered to relieve flatulence. All the above remedies were given alone or combined, to co-operate or assist in the action of each other. Cod-liver oil has never been prescribed, on account of the patient having such a dislike and repugnance to it, and her entire refusal to take it, even in a disguised form. In connection with this, I may here state the fact that as soon as she is down, or afflicted with her disease, she immediately shows a disgust for butter (of which she is very fond), and will not touch it again until she feels better.

I regret to say that galvanization of the spinal cord and of the cervical sympathetic has not yet been used in this case, and whether it would benefit or do her any good remains as yet uncertain. The principal hypnotics administered, sometimes alone or in combination, were the bromides, hydrate of chloral, hyoscyamus, cannabis indica and opium in full doses. They all seemed to agree and act satisfactorily ; especially was this in the case of opium, which, according to Dr. Hammond's diagnosis, and the well-known stimulating and hyperæmic action of that drug upon the brain, would naturally act the opposite, and consequently be injurious and contra-indicated in cases of cerebral hyperæmia.

The bromide of sodium had to be used in large and liberal doses of forty to sixty grains at bed hour, and in smaller ones during the day (continued for days or weeks), to produce quietude and prevent restlessness.

In conclusion, the above case suggests the following interesting points: Is it really one of cerebral hyperæmia, melancholia, or both? and will the patient eventually get well or recover? I have no time here to recall a few of the principal differential and distinguishing psychological and physical symptoms of the two diseases. However, the history of the above case, I trust, has been clearly and sufficiently detailed to leave no doubt of its true nature, and the supposition that the case is rather one of melancholia than cerebral hyperæmia.

Since the above was penned, patient has had two relapses, with an interval of a week or two between each, and during which she feels apparently well. On investigation, could not find any cause. The bromide

has been discontinued, as I cannot see that it does much good now, although it apparently did so at first.

Again opium has been used, at bed-time only, and from which excellent results have been obtained, or, in the words of the patient herself: "After I take a dose, the next day I feel altogether a different woman. My nervousness and low spirits seem to leave me, and the distress in my stomach and bowels also disappears. In fact, I almost feel like myself." She has consented at last to try cod-liver, which she takes in a disguised emulsion, together with the syrup lacto-phosphate of lime.

DISCUSSION.

Dr. Shaw: Thinks Dr. Lamadrid's diagnosis is correct—that of intermittent melancholia. Drugs have very little value in such cases, except small doses of opium. Food, in large quantity and according to a regularly prepared and measured diet-list, has been shown by Blandford, of London, and others, to do most good; the patient's repugnance to food must be overcome, by force if necessary. Dr. S. is of the opinion that the use of the ophthalmoscope is greatly overrated as a means of diagnosis of cerebral conditions; the intra-ocular condition does not change under the influence of quinine and other drugs carried to decided cerebral effects. Experiments made on his own person, and on others by himself, with Dr. Mathewson, produced negative results. He has taken quinia to the extent of marked cerebral congestion and tinnitus, with very distinct injection of the membrane of the tympanum, but no change was observed within the eye.

REPORT OF COMMITTEE ON CONTAGIOUS DISEASES.

At the stated meeting of this Society in September last, Dr. Benjamin Edson read a paper on the "Contagious Diseases of Children."

The members present were much interested in the paper, a vigorous, practical discussion of the subject followed, and finally the undersigned were appointed a committee to consider and report to the Society what, if any, measures the profession could promote to prevent the spread and prevalence of contagious diseases in this city. The committee have only considered the large and difficult subject of epidemiology in one narrow aspect—to wit: the possibility of any practical direction, at this time, of the evident interest which the profession in this city feels in the prevention of contagious diseases. The committee note with satisfaction, that the profession in general have arrived at the conviction that certain diseases are preventable, and are ready to adopt and join in any wise plan and efforts for disease-prevention. It is one very important service that the sanitary specialists of the medical profession have rendered to their brethren of the profession, and will, through the latter, render society—to wit: the

separation of the diseases called zymotic from other diseases, and distinguishing them as the class of diseases which has for ages visited cities and nations as epidemics and plagues, and which will in the future be entirely destroyed by preventive medicine.

This proposition marks the progress of medical opinion; but it is equally true that the unprofessional public opinion is, unfortunately, accurately stated by Dr. Edson in his paper in the following words: "Should you question the first score of mothers you meet upon this point, you will probably be surprised to find so many who seem impressed with the idea that, in a general way, it is the decree of Providence that children shall have measles, mumps and whooping-cough; and while they may shrink from purposely exposing the dear ones to the graver diseases, still, if by accident their children should be exposed, and these inevitable childhood troubles got out of the way, why—with a sigh of relief—'the sooner it is over, the better.'" Every physician knows the prevalence of this public opinion, and the immense resistance to be encountered and overcome —resistance both of indifference and active prejudice—before public and professional opinion and action can be both enlightened and united in the matter of the control of contagious diseases. There is a price, we have heard, to be paid for liberty: a part of that price we may see in this matter of contagious diseases.

In free England, where the immortal Jenner gave to his countrymen—or rather, to the world—the great gift of vaccination, out of every 1,000 deaths in the half century—from 1800 to 1850—there were 35 deaths from small-pox; while in Germany there were only 7.26; and in Sweden so few as 2.7 in 1,000. In London and New York the records show that small-pox has been epidemic so often as once in from three to five years since the beginning of this century and the introduction of vaccination.

We do not want a despotism, even if it would give us immunity from small-pox as on the continent of Europe; but we may be instructed by the results of the enforced vaccination of children in those countries. And equally instructive were the records of the recent epidemics of small-pox in Brooklyn, New York and Philadelphia. The wards in these respective cities, in which the population were generally intelligent, were almost entirely free from small-pox, while in all these cities the loss of life and the sickness fell upon the poor living in tenement houses. The cost was, however, a public loss, and fell upon all tax-payers, and especially upon the business interests of the cities.

In an article entitled "Scarlet Fever Preserves" (*Practitioner*, vol. 13, pp. 452, *et seq.*), it is stated that in twenty-one years—1851-71—388,340 persons died at all ages, in England, of scarlet fever. Within this period there were five epidemics of this disease. The inference is made from a study of these epidemics that scarlet fever is a progressive growth in England. "It appears to be becoming, if it have not already become, supereminently the 'English plague.'" But in the very presence of this plague, Professor Aitken writes (*Science and Practice of Medicine*, pp. 453, vol. 1, Am. Ed.): "If a patient be from the outset isolated from all who are susceptible of contagion; if everything proceeding from him is drenched with chemical disinfectants before it leaves the sick-room; if the exhalations from the skin and the peeling skin itself are mechanically imprisoned by inunction with oil until they can be removed by a warm bath, and if all clothing, bedding and furniture are disinfected at the close of the illness, a case of scarlet fever will remain barren of results. To carry out such a process thoroughly requires the command of space, of money and of attendance, and requires also wisdom and self-denial on the part of relatives and friends. If it were possible to begin to-morrow, and to carry it out in every case, scarlet fever would have *ceased to exist in the country at the end of two months, and it is possible, or even probable, that it would never return.*"

The committee allude only to small-pox and scarlet fever as examples of the con-

tagious diseases, and briefly to the foregoing suggestions of the importance of the subject, both in view of the prevalence of these diseases and the success which will attend preventive measures, and come to the question of *our duty* in the premises.

This is still, mainly—the committee have come to believe, after considerable reflection and inquiry—the intelligent discharge of our obligations to the families under our care, in the light of the requirements of our science, in respect to the arrest of contagious and infectious diseases.

Professor Parkes, in an interesting and valuable little work which he wrote during his last fatal illness, and in which he gives the results of a prolonged, varied and matured experience, in reference to preserving and improving the Public Health, says: "Of late years, since the recognition of the fact that all these (contagious) diseases must have special causes, the prevention of the infectious diseases has become much easier, although the exact nature of the cause may be unknown. The general principles on which the prevention is based are: First. The recognition of the places of origin or conditions of growth of the morbid agent—*i. e.*, whether it arises from processes going on in some of the structures of the human body, or in substances outside and independent of the body, and under what state of heat, moisture, etc.; if these points are known, the formation of the agent can be prevented, or the agent can be destroyed. Second. The recognition of the means of the spread of the agent—*i. e.*, whether it spreads by the help of the air, or is carried in drinking water or in food, or is transferred directly from one person to another—that, when known, the carriage of the agent may be stopped. Third. The early removal of the agency from among the community, so that the risk of spreading in any way may be lessened. In the case of each of these diseases the preventive measures are different, and it is impossible here to go into so large a subject as the prevention in each case. The measures include a continual supervision over the conditions of origin, introduction and spread, as far as they are known. Two points must, however, be specially noted—the *isolation* of persons with any disease which directly or indirectly can spread from one person to another is a necessary step in all cases. In the crowded houses of towns, some diseases, such as typhus, scarlet fever, measles, relapsing fever, etc., spread with great rapidity, and the only possible check is to *remove the sick*, at the earliest moment, from the house, and to prevent persons ill with infectious disease from exposing themselves in public places and conveyances."

These are the indications briefly and comprehensively stated, and while your committee do not recommend that the Society undertake to advise the public authorities, or any of them, in regard to their official acts and duties, it does profoundly believe that if every member of this Society will in his practice give intelligent effect to these indications of preventive treatment, the desired result will be effectively secured, and as rapidly as by any possible means. The education of the community will be begun. The co-operation of the intelligent classes, who can command the means necessary to carry out these measures, will be ready, and soon the example will spread through all classes.

In regard to one of the contagious diseases—small-pox—the prevention of which is dependent simply on the constant reduction of the number of people liable to the disease—that is, on vaccination, your committee desire to call the attention of the Society to the existing special legislation for the protection of New York city from small-pox. It is now three years that New York has had the benefits of a statute which requires the municipality to place $20,000 at the disposal of the Board of Health to maintain a constant vaccination service. The law recognizes, and all experience justifies the law, that vaccination must be offered from house to house, must be a constant service, and

must be performed by experts. The Board of Health in this city, in 1874, favored such a law for Brooklyn. A bill was introduced in the Legislature, but was not favored by the Brooklyn members and was not reported from committee.

It ought to be remembered that the failure of the Legislature to act in 1874 was followed by a small-pox epidemic in this city in 1875.

The working and effect of such a law are stated in the following quotation from the report of the Sanitary Superintendent, in 1875, of the work of the temporary vaccination service organized by the Board of Health:

"The repeated visits of the physicians (of the vaccinating corps) to the houses of the people have produced confidence; on their first visit their services are refused in many cases, but in the end very few, if any, remain unvaccinated. The guiding principle of our work has been, when a person accepts our vaccination, to insure by repeated re-inspections and revaccinations, if necessary, protection as the sure result. Vaccination loses credit if our vaccinated children take small-pox the same as the unvaccinated. Often the first vaccination is unsuccessful. But by repeating the vaccination one or more times, some of the vaccinating physicians report a rate of only one failure to every 243 primary vaccinations. These repeated visits also enable the physician to watch the progress of each case, and in the event of undue inflammation, eruptions, erysipelas or other accidents, to give necessary care, allay alarm and prejudices, and inspire proper confidence. Our experience shows that when we have gained the confidence of the people, we need no compulsory vaccination law to secure general vaccination; while all the public alarm attending the prevalence of the pest will not avail to make vaccination offered by an official, a stranger, acceptable to many, even to occupants of the very houses in which cases of small-pox are in progress. The end to be reached is to prevent, by a public service, small-pox among the population in defined quarters of the city, dependent upon the public physicians, even as it is now, in other quarters of the city, prevented by the care of the family physician. Costly epidemics are sure to occur, at intervals of a few years, among our unvaccinated population. A less costly constant public vaccination service, carried on by a selected and trained corps of vaccinating physicians, working each in his own district, among, for this purpose, his own families, to whose confidence he is commended in precisely the same way as any family physician, and reaching every infant within six months after birth, is for this city the only safeguard worth a moment's consideration."

Respectfully submitted.

B. A. SEGUR, M.D.,
A. J. C. SKENE, M.D.,
BENJAMIN EDSON, M.D.,
Committee.

——THE STATE SOCIETY TRANSACTIONS for 1876 have arrived. Those entitled to copies can obtain them at our Rooms. The present volume follows that of 1875 in respect of size and general appearance; but those who have examined it with care say that there are very many typographical errors. Our list of members, at page 380, is rendered valuable by the addition of addresses, very nearly correct, for May of last year. Three members have papers in this volume.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 368 Fulton Street.

The April meeting will be held on the 17th, at which there will be presented the following papers:

Versions and Flexions of the Non-Gravid Uterus, by Dr. J. R. Vanderveer.

Report of the Committee on Tracheotomy Statistics, through Dr. L. S. Pilcher, Chairman.

Belladonna Poisoning, by Dr. J. B. Leary.

ITEMS.

——Dr. Charles Chase died in this city, in his 84th year, on March 2d. This venerable gentleman, formerly a surgeon in the navy, had for many years resided on Ryerson Street, retired from active practice, but well known for his prominence in good works.

——Dr. Thomas Andrew Brady died of Bright's disease March 8th. He had been in practice in this city nearly ten years, having come here soon after his graduation at Bellevue in 1867. He joined the County Society; for some time he was a sanitary official under a former Health Board. He died in the prime vigor of his life—only thirty-eight years of age.

——Please Return. Two magazines, the *London "Practitioner"* and *"Obstetrical Journal Great Britain and Ireland"* (American reprint), for January, 1877, tied with a string and labeled "Property of the Reading Club," were taken from the piano at the commencement of the February meeting of the Society. Please return to Dr. Sizer, 336 Greene Ave.

——Yellow Fever in Savannah, last summer, caused nearly 1,200 deaths in an estimated population of 32,000.

——The Diet Dispensary has sent us its first Annual Report, for the year ending January, 1877. It makes a very good showing for an undertaking opening so modestly as it did; its receipts and expenditures on behalf of the sick poor exceeded a thousand dollars; the number of patients was 230. Membership may be had at four dollars a year, and donations are invited from all classes of citizens. Its location is 49 High Street.

—Fracture of Eleventh Dorsal Vertebra in a pregnant woman, with gestation pursuing its regular course and delivery of living child, is

reported from the hospital at Flatbush, by Dr. C. E. Frith (*Phys. and Pharm.*, Feb.). The accident, fall from third story window, occurred June 30; delivery, Sept. 14, of nine months' fœtus, weighing 4½ pounds; mother died Sept. 23; child died Dec. 1. "The only force operating in this delivery was that of the uterus itself, being acted on by the sympathetic system of nerves alone. Its contractions alone brought on the labor, unaided by the abdominal muscles, as they were entirely inactive. So free was the patient from pain, that she had no knowledge that she was in labor until she heard the child cry."

——The Trappist Monastery, in a desolate and sickly spot, the *Tre Fontane*, in the Campagna, is the site of some experiments towards the reclamation of malarial territory by means of tillage, especially in conjunction with the extensive cultivation of the Eucalyptus. Since the latter has been well a-growing, the brotherhood have enjoyed almost entire immunity from malaria all the year round. They also make an extract or "elixir" from the leaves, which, in their experience, is far more efficacious than quinia for the treatment of those of their number who labor in the field, and, being especially exposed, require sometimes curative as well as prophylactic measures.

——The Modern Tendency of the Medical Art is the title of an editorial in the *Scientific American*. Its closing paragraph runs as follows: "Medical science is now upon a new, unselfish and noble career, and is aiding the introduction of sanitary measures by enlightening public authorities as to the best means of preserving the health of communities by anticipating and preventing disease; and it cannot be denied that society in general has been largely benefited by the progress of medical research, and by the labors of investigators in pathology and its kindred sciences; who have given the world the benefit of their continually increasing knowledge and insight into the nature of the ailments to which human nature is subject." Testimony of this kindly kind does not often come from the laity, who cannot always comprehend how the healers of the sick shall be in earnest about the abolition of sickness. It is all the more pleasant from being entirely voluntary; and it is encouraging, as showing that the downright good work of medicine is in the long run as certain of recognition as that in mechanics or metaphysics.

——Mercury hypodermically administered in the treatment of syphilis is a new expedient of Prof. Vanberger. A solution of the albuminate of mercury is made that contains one centigramme—about one-seventh of a grain—of mercuric chloride to the average syringeful of fifteen minims; this amount may be given two or three times a day. There appears to

be no special tendency in it to cause abscess. Certain syphilographers of this country are trying this plan in skin-syphilis.

——"President George Washington once sent to his cousin, Mrs. Washington, of Fairfield, a letter introducing a physician famed for the cure of cancer; and this letter has just been sent to Cincinnati to be sold, by the descendants of the lady."

It was a prevalent notion in those days, amounting to a mild form of superstition, that special gifts and powers in the combating of disease were possessed by physicians, some in one direction and some in others. One was said to be strong in chronic diseases, another good in fever or cancer or consumption, and so on; certain families, even, were credited with special aptitudes, particularly in regard to "bone-setting," which, as a family trait, was claimed for females as well as males. Another expression of this mystical belief was the name acquired by some who were deemed to be "born" physicians, as contradistinguished from those whose skill came from education. Vaunted recipes, too, for pills, etc., were handed down from father to son, in successive generations of practitioners. "My elixir vitæ," and "my pills royal," are among the names of compounds that served to kill or cure our ancestors. This kind of practice was at no time regarded as accordant with the honor bright of the profession, but it was not sufficiently bad to shut its perpetrators out from such fellowship as then existed.

——The use of chloroform as an aid in the perpetration of nocturnal robbery and other crimes is frequently alleged but seldom proved. By the profession, at least, narratives of that kind are commonly received with a great many grains of allowance. That this skepticism is not groundless or unreasonable is shown by the results attending certain curious experiments that have been tried at the Hospital Beaujon by M. Dolbeau. He tested the effects, upon persons already plunged in profound natural sleep, of chloroform vapor, a napkin thoroughly saturated being held at the proper distance from the face of the patient, so that he should not be disturbed by contact. The effects were found not to be the same at all ages. In the case of adults the vapor emanating from the napkin generally caused an abrupt awakening with more or less jactitation and sometimes with outcry. With young children the effect was to produce anæsthesia quietly and without arousal. These observations, if fully confirmed, will have a manifestly important bearing on certain questions in legal medicine.

The following circular has been sent by the President of the State Society to each of the members and delegates.

Brooklyn, March 24th, 1877.

DEAR DOCTOR:

The objects sought by The Medical Society of the State of New York, at its annual meetings, may possibly be better attained by some organization of the business beforehand, so that, the principal subjects to be presented being published, members would perhaps go to the meetings prepared to participate in the discussions, and thus render these more accurate, more useful and more general.

No programme, however, can be made up without the active co-operation of the delegates and members; and therefore these are earnestly invited to forward their own interests in the next annual meeting, to be held at Albany on the third Tuesday in June, by contributing short, compact papers on subjects of general professional interest, which will bring forth useful facts and information through discussion—and by giving notice of such papers beforehand to the undersigned.

If the delegates and members will take interest enough in their own work to supply the means promptly, this plan for increasing the interest and value of the next meeting will be tried, by making up and publishing a programme a month or more in advance.

Be kind enough, therefore, to notify the undersigned, by filling up the enclosed blank—and returning it in the enclosed stamped envelope before the 15th of May—of the subject or title of any paper you may be willing to offer, and mention the time required to read it—and in return, if sufficient means be supplied, a programme will be sent to you.

Very respectfully yours,

E. R. SQUIBB, M.D., *President.*

Dr. E. R. SQUIBB, President, Brooklyn.

(Place of residence in full.)

..... 1877.

DEAR SIR:

In response to your request, I propose to be present at the next annual meeting of The State Society, and to offer a paper upon

.....

The reading of this paper will require about minutes.

Very respectfully,

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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(1874 to 1878.)

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I have made arrangements to introduce the Rubber Cushion Axle in this City. Any Information and Cushions seen, by applying at the office.

MAP
to accompany Report of Dr. Pilcher
on Croup and Tracheotomy
in the City of Brooklyn, N.Y.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, APRIL 17, 1877.

CROUP AND TRACHEOTOMY IN THE CITY OF BROOKLYN, NEW YORK.

A STUDY OF LOCAL CONDITIONS AND LOCAL EXPERIENCE.

A REPORT MADE TO THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, STATE OF NEW YORK, APRIL 17TH, 1877.

BY LEWIS S. PILCHER, M.D.

The attention of the Medical Society of the County of Kings has frequently been directed to the examination of croup in some of its aspects in recent years. In October, 1862, Dr. Wm. Gilfillan read a paper on Tracheotomy in Diphtheritic Croup, in which three cases were reported. In November, 1869, Dr. J. H. H. Burge presented a paper on the Treatment of Croup. This paper attracted much attention. The views advanced in it have, to a very large degree, influenced the practice of the profession in this city ever since. In March, 1871, Dr. O. C. Sparrow read a paper on the Pathology of Croup. In March, 1874, Dr. C. H. Giberson read a paper on the Differential Diagnosis of Croup

and Diphtheria, which called forth much discussion. In May, 1875, Dr. A. W. Catlin reported to the Society a successful case of tracheotomy in croup, Dr. J. C. Hutchison having been the operator. In September, 1875, Drs. W. F. Sanford and F. W. Rockwell read papers on the subject of Tracheotomy in Croup and Diphtheria, in which successful cases were detailed. The same subject was continued in October, 1875, when papers by Drs. L. S. Pilcher and H. J. Garrigues were presented.

This report, in its preparation, has naturally divided itself into three parts, viz.:

First. A study of the features which croup presents in Brooklyn.

Second. A study of the results of tracheotomy for croup, as done in Brooklyn.

Third. Such conclusions as an examination of the facts elicited, in their relations to each other, shall seem to warrant.

The term croup is used in this report in a comprehensive sense, as including all forms of acute inflammatory disease of the larynx or trachea, which may produce narrowing of their calibre to such an extent as to occasion serious prolonged dyspnœa.

An examination of nearly three thousand certificates of death, given in this city during the seven years last past, in which death has been attributed to various forms of croup, has shown that great confusion and uncertainty exists in the use of terms indicating the differing pathological conditions which may be present in croup, using the word as stated above. The terms laryngitis or tracheitis simply are often used where the affection has undoubtedly been one attended with membranous exudation; the term membranous croup is still more frequently used where the exudation has been diphtheritic in character; cases of catarrhal laryngitis and of œdema glottidis are recorded as cases of membranous disease.

The attempts made, in the official registry of diseases, to distribute fatal cases of croup under the headings adopted of Croup, Diphtheria and Acute Laryngitis are totally unreliable and calculated to mislead. These records abundantly sustain, from the clinical stand-point of the general practitioner, the assertion from the laboratory of the histologist, "*that there is no sharp dividing line between diphtheria and croup.*"* Many of us, puzzled as to the diagnosis of a given case, will feel grateful for the sympathetic assertion of the German professor, "that it is not always easy during life to make a clear diagnosis" between true croup and

* Wagner, quoted by Steiner—Ziemssen's Cyclopædia Prac. Med., vol. iv, p. 257—article on Croup.

the croup of diphtheria.*† As regards the various diseases included under the general title of croup, the one point in common possessed by them, which compels their classification together in this inquiry, is the possibility of the occurrence of dangerous dyspnœa, demanding tracheotomy for its relief.

In the preparation of this report, a special examination of the records of the Board of Health, during the years 1870 to 1876 inclusive, has been made. This required the inspection of over 80,000 certificates of death. Records of 2,769 fatal cases of croup‡, occurring within the period mentioned, have been collected from this source. An abstract of the certificate of death in each case was made. From the careful digestion of this material much of interest has been obtained.

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* As a striking illustration of this fact, during the past seven years, in the city of Brooklyn, in sixty-two different instances have two or more fatal cases of croup occurred in the same house, either upon the same day or within a few days of each other.

In twenty-eight instances, in each, both cases were reported as croup or membranous croup.

In thirteen instances, in each, both as diphtheritic croup.

In fifteen instances, in each, one case as diphtheritic, and the other as simply croup, or as membranous croup.

In two instances, in each, one as croup, the other as laryngitis or tracheitis.

In one instance, one as diphtheritic croup, the other as tracheitis.

In three instances, in each, both alike as laryngitis or tracheitis. The strong presumption, almost certainty, is that all of these cases were diphtheritic in their nature.

† Steiner, op. cit., p. 259.

‡ Diseases under 29 different designations are included in this number. The following is the list, arranged in the order of frequency with which each term is used:

Membranous Croup.
Croup.
Diphtheritic Croup.
Laryngitis Crouposa.
Cynanche Trachealis.
Laryngitis.
Tracheitis.
Pseudo-membranous Croup.
Pseudo-membranous Laryngitis.
Membranous Laryngitis.
Exudative Laryngitis.
Inflammatory Croup.
Laryngo-tracheitis Crouposa.
True Croup.
Laryngo-tracheitis.
Œdema Glottidis.
Angina Crouposa.
Cynanche Laryngealis.
Malignant Croup.
Laryngitis Catarrhosa.
Cynanche Tracheo-laryngealis.
Tracheo-laryngitis.
Tracheitis Membranosa.
Angina Membranacea.
Catarrhal Croup.
Acute Laryngitis et Tracheitis.
Angina Laryngea.
Angina Membranacea Trachealis.
Angina Trachealis.

I. Croup in Brooklyn.

Croup is one of the chief fatal diseases that prevail in Brooklyn. The number of deaths occasioned by it annually has more than doubled since 1870*. During the same time it has risen from the 11th place in the scale of causes of death, occupied by it in 1870, to the 5th, gained by it in 1876†. Young children have been the chief victims of this disease, 2,301 in 7 years. 83 per cent. of all the cases examined were in children less than 5 years of age. But 30 out of the entire number were 10 years or more of age.‡

According to its population, Brooklyn at the present time has a death-rate from croup nearly one and a half times as great as that of New

* The figures for the seven years are as follows:

1870	230	1874	391
1871	277	1875	588
1872	367	1876	535
1873	381		

† *Tables of chief causes of death in the order of their prevalence, arranged from the official records of the Board of Health.*

1870—(last 8 months only).		1876.		
1. Diarrhœal Diseases	1217	1. Diarrhœal Diseases	1546	
2. Consumption	835	2. Consumption	1533	
3. Convulsions	455	3. Pneumonia	881	
4. Tabes Mesenterica	425	4. Diphtheria	810	
5. Pneumonia	285	5. Croup	412	(535)
6. Debility	283			
7. Congestion of Brain	221			
8. Hydrocephalus	191			
9. Meningitis	183			
10. Dysentery	180			
11. Croup (including Laryngitis Ac.).	144			

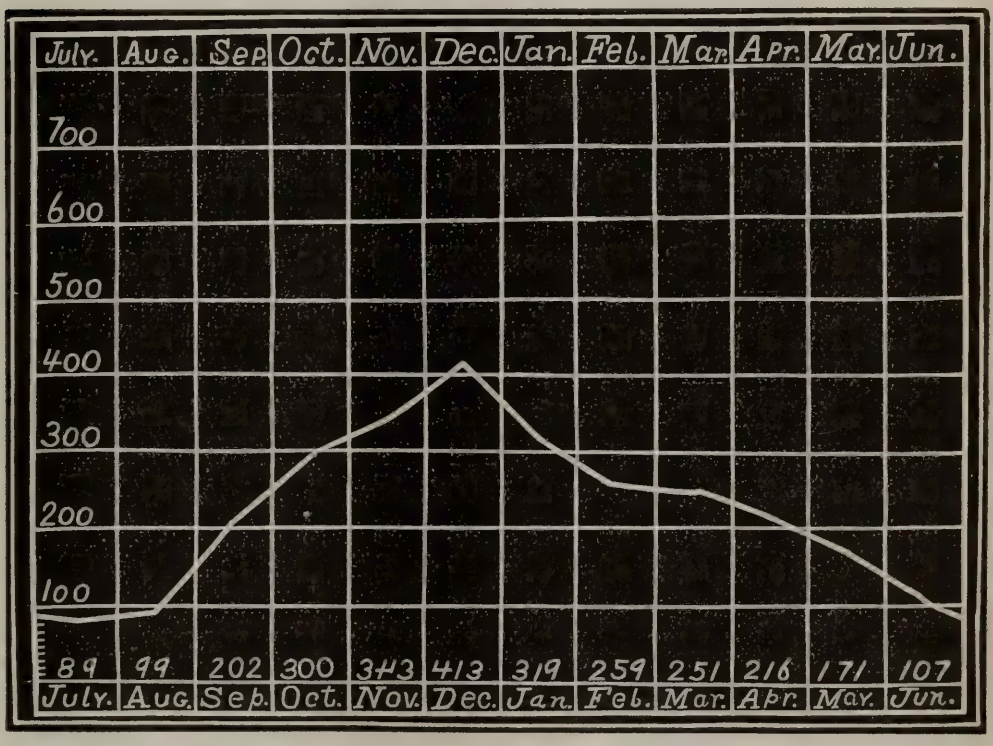
No record of the first 4 months of 1870 could be obtained.

‡ *Table of Ages of Fatal Cases of Croup.*

Age.	*No.*
Less than 6 months	57
Between 6 months and 1 year	175
1 to 2 years	661
2 to 3 "	590
3 to 4 "	497
4 to 5 "	321
5 to 10 "	438
10 and over	30
Total	2,769

York City, and more than twice as great as that of the State of Massachusetts.*

Croup varies as to its prevalence with the season of the year. In midsummer it counts its fewest victims. In September a decided increase in its prevalence takes place. In December the number of cases reaches the highest point, each of the intervening months having exhibited an increase above that of the month immediately preceding. With January an ebb begins which continues more and more apparent with each succeeding month until midsummer again is reached. This ebb and flow of the croup wave is illustrated in this diagram, which is constructed from the totals for each month during the period from 1870 to 1876 inclusive.


July. Aug. Sep. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May. Jun.
700
600
500
400
300
200
100
89 99 202 300 343 413 319 259 251 216 171 107
July. Aug. Sep. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May. Jun.

* According to the census of 1870, the population of Brooklyn was..... 396,099
New York City..... 942,292
Massachusetts.....1,457,351

The deaths from croup, in the year 1875, as reported by the Health Boards of the City of New York and of the State of Massachusetts, were, for New York, 758; for Massachusetts, 680. The deaths from croup in Brooklyn for the same year, according to the record of its Health Board, were 451 (588 according to the definition of this report). Using the official figures for the purpose of comparing with official figures, the solving of a simple problem in proportion results as above stated.

Various sections of the city of Brooklyn differ greatly in the degree to which they are subject to the ravages of croup. The geographical lines marking out the croup districts can be quite distinctly traced. In the accompanying map* the location of each of the 2,769 fatal cases of croup, under examination, has been fixed, and is shown in each instance by a small black square. Black districts appear with startling distinctness by the side of districts almost entirely free from the tell-tale spots; at various points more isolated aggregations of spots mark out more limited croup centres; in a large part of the extensive area of the city, here and there spots tell of scattered cases of the disease. The darkest part of the map is seen to be within that quite regular parallelogram bounded by North Second Street on its northerly side, Bushwick Avenue on its easterly side, Flushing Avenue toward the south, Union Avenue and a line prolonged from it to the corner of Marcy and Flushing Avenues toward the west. Within this territory 418 fatal cases of croup are located, nearly one-sixth of the entire number. Within this territory live about one-eleventh of the entire population of the city (census of 1870). It includes portions of the fifteenth, sixteenth and nineteenth wards.

In that part of the city stretching from the district first referred to, in a south-westerly direction to the East River, lying between South Seventh and North Tenth Streets, many deaths are seen to have occurred. This includes portions of the thirteenth, fourteenth and sixteenth wards.

Passing over to the Western District of the city, two regions of special prevalence attract notice. One, extending upwards from the East River between the Navy Yard and Fulton Avenue as far as to Myrtle Avenue, continues eastward between Myrtle and Flushing Avenues as far as to Nostrand Avenue, sending out a spur along Raymond and Navy Streets and Hudson Avenue as far as to Lafayette Avenue. The second, beginning at Joralemon Street, lies between Henry Street and the river front, a large majority of the cases occurring below Hicks Street. It extends as far as Hamilton Avenue. From this point the black spots are seen to cluster around two diverging lines, the one following the line of Van Brunt Street, between Richards and Conover Streets on either side, to its termination at the water's edge; the other following the line of Hamilton Avenue to the Gowanus canal.

In addition to these dense croup districts, three others of lighter shade and less extensive are black enough to attract attention: the seventeenth ward, Greenpoint, at one extreme of the city; the vicinity of Greenwood Cemetery at the other, between Sixth and Second Avenues,

*See map prefixed to report.

and Sixth and Twenty-third Streets; and, lastly, the plot bounded by Atlantic Street, Fourth Avenue, Union and Court Streets.

The outlying, sparsely-settled portions of the city, including part of the seventeenth, all the eighteenth, twenty-fifth and twenty-fourth wards, much of the twenty-first, twenty-third, ninth, twenty-second and eighth wards, cannot fairly be made the subjects of comparison in such an examination as this. Here and there the small black squares appear throughout this territory.

Framed in by thickly clustering black squares, certain districts appear in which none, or but very few, are seen. The greater part of the nineteenth ward is wonderfully clean. Surrounded on three sides by the three black districts first described, the contrast presented is very striking.

The greater part of the first ward is equally in contrast with its surroundings. From Columbia Heights to Fulton and Court Streets, from Middagh to Atlantic Streets, save the corner bounded by Joralemon and Hicks, it presents a bill of health but slightly marred.

The triangle included between Fulton and Myrtle Avenues, extending from Cumberland Street to Tompkins Avenue, throughout most of its extent thickly built up, is comparatively free from the death spots, although scattered here and there they occur quite often enough.

The striking difference in loss of life experienced from croup in different portions of this city is not accidental. An examination into the conditions to which this difference may be referred brings out the following facts:

1st. Every district in which croup is seen to abound is a *tenement house* district. This means—*a.* Crowded, ill-ventilated, filthy habitations; dwellings in which every principle of hygiene is violated. *b.* Numerous children, the pabulum of the disease; the dwellers in tenement houses are of a class who are influenced little by the considerations which prompt the more intelligent and well-to-do to limit the number of their offspring. *c.* Large numbers of illy-nourished and weakly children, from improper diet, care and surroundings, the result of apathy, ignorance, prejudice and poverty in the parents.

2d. Every district presents *soil conditions of an unfavorable character.* This is a necessary corollary of the statement that they are occupied by the dwellings of the poor. Along the water front, occupying ground rescued from the river or bay; upon the site of marshes, now more or less obscured by the filling in process; in valleys that have been the site of water-courses, whose drainage is imperfect—these are the districts that appear so black in the map which has been presented.

Of some of these districts the Report of the Board of Health of Brook-

lyn for 1873–'75 contains graphic descriptions from its Sanitary Inspectors. With reference to the blackest of the croup districts, Inspector T. P. Corbally reports:

"It is estimated that at least one-third the area of the sixteenth ward and one-third of the fifteenth ward has been marsh ground, or ground covered with tide water." . . . . "Much of this marsh has already been filled." . . . . "The substance deposited is mostly organic matter, and is fermentable and putrescible in the highest degree."

"In most places the water rises to the level of the tide, within two or three feet of the surface, penetrates the rough walls and fills cellars, making the houses damp and unhealthy. There is absolutely no drainage, and, in many cases, the sewers are a positive nuisance, for the tide drives their contents into the cellars. Very often the storm-water forces the covers off the man-holes of sewers, and floods the street as well as the cellars. This happens frequently on Broadway near McKibbin Street. I have been informed by the Alderman of the sixteenth ward that the same thing has occurred in Graham Avenue near Scholes Street. Thus surface water and tide water contribute to increase the moisture of the porous soil in this district."

With reference to the district seen lying below Henry Street, Inspector F. H. Colton reports:

"A glance at the map on which are outlined the original water front, the old water-courses, the location of ponds and marshes, in the first, sixth and twelfth wards, will show how large sections of these were formerly *wholly uninhabitable*, where now dense populations cover them all. In the south-west corner of the first, beginning a little below Joralemon Street, the water line penetrated nearly to Willow Place.

"In the sixth ward, all west of Columbia Street was either water or a marsh, with here and there a little spot, designated on the map as an island. At one point, between Harrison and Degraw Streets, what was known as Cornell's Pond, though really an outlet to the sea, penetrated almost to Hicks Street. Much of Hicks Street itself required to be 'built' in order to meet an established grade.

"The section comprising the twelfth ward was virtually a single marsh, or a part of the bay, and much of it is an unredeemed marsh still. Low and flat, with no natural drainage, and, until lately, scarcely an attempt at artificial drainage, it holds on its shallow, soggy soil twenty thousand inhabitants. So-called improvements were a travesty on the word. Highways were constructed of the vilest material, and no provision was made for draining the intervening basins. Water fell into and was held by them; polluted by stagnation, it polluted the air by evaporation, carrying with it the products of vegetable and animal decomposition. Gradually, as it became desirable to prepare these lands to be built upon, the ponds were filled in and the water was put out of sight, simply, with deposits similar to those which had formed the streets. It was a system of *soakage* not *drainage*, by which a foundation was made for the homes of thousands."

With reference to the district lying north of Atlantic Avenue, between Court Street and Fourth Avenue, Inspector J. H. Raymond reports:

"A glance at a map of Brooklyn, showing the old water-courses, will demonstrate that the unhealthy part of the tenth ward, in the neighborhood of the canal, was once a marsh, the creek running far into what is now a densely-populated district. To render this sufficiently solid to build upon, it was filled in, and in this process, then, as

now, no regard was paid to the natural course of the water, nor to the kind of material used in filling. Obstructed water-courses and made land—that is, land made of mixed ashes and garbage—account for the high mortality of this and other similar regions."

Similar conditions, in varying degree, exist in each of the other croup districts. Details of the condition of each would not add anything to the proof of the influence which bad soil conditions have in the development of croup.

A different witness, remarkably confirmatory of the power of local conditions in the production of croup, is found in the comparison of the experience of New York City and Brooklyn.

According to the report of the Metropolitan Board of Health, 1869, 468,492 people lived in the tenement houses of New York City at that time.

During the time which has elapsed since then, the increase in the number of the tenement house population has been greater in proportion than in that of the better classes. In 1875 the number must have approached 600,000—a moderate estimate. It certainly exceeded 500,000, a number greater than that of the entire population of Brooklyn at that time (484,676). In the matter of herding people into these tenement houses, Brooklyn has nothing to compare with that which is seen in New York; nevertheless, the comparative death-rate from croup in Brooklyn has been seen to be nearly one and a half times as great as that in New York (see page 62). To the differing local soil conditions must this difference in great degree be attributed.

In point of squalor and overcrowding the tenement house districts of Brooklyn are equaled and even surpassed by those of other cities; but no other city can present such extensive districts, teeming with population, beneath whose feet is a soil so reeking with moisture, and so productive of dangerous miasms.

It is pleasant to turn from these dark places to those that are light.

The triangle in the Eastern District, included within Broadway, Penn Street and Wythe Avenue, is a beautiful knoll, gently sloping in every direction, with a dry sandy soil, well sewered and drained. Intersected by Lee and Bedford Avenues, it is well built up with handsome dwellings, and its inhabitants are refined, intelligent and well-to-do. It is the choice spot of Williamsburgh. In this region but twelve spots can be counted, and these are upon its outskirts.

The description of Brooklyn Heights, comprising the second of the bright districts noted, is similar. In the words of Dr. Colton:

"No section of the city, probably, has had its original contour less modified, in the construction of streets and preparing it for habitations, than that comprising the old third ward. There were no hills to be removed; no low places to be filled with

street and house refuse; no ponds to be soaked up; no water-courses to be interrupted; and its area was not enlarged by encroaching upon the waters of New York Bay. It held an elevated site, with a deep, dry soil; at the same time sloping sharply in two directions and slightly in a third, surface water could not become ponded, but was conveyed promptly outside its borders. Its streets were early sewered after the introduction of the system of sewers into the city, which more completely provided for surface drainage."

Though compactly built up, the black spots within its borders can be counted upon one's fingers.

A description of the third district, that known in the common parlance of the city as the "Hill," would be a repetition of the same things.

The consideration of the elements of living presented in the description of these districts would constitute a treatise upon the prophylaxis of croup.

Isolated cases which occur in regions free from those conditions which this examination has shown to be fruitful in croup, are the result of special combinations of influences peculiar to the house or immediate neighborhood in which they occur. Some very instructive examples of this have come under the observation of the committee. Details of these cases must be omitted here. Soil moisture and noxious miasms always appear in varying degree as factors in the development of croup.

The influence of the season of the year in increasing the mortality from croup, to which attention has previously been called, is the more fully appreciated when considered in connection with these local conditions.

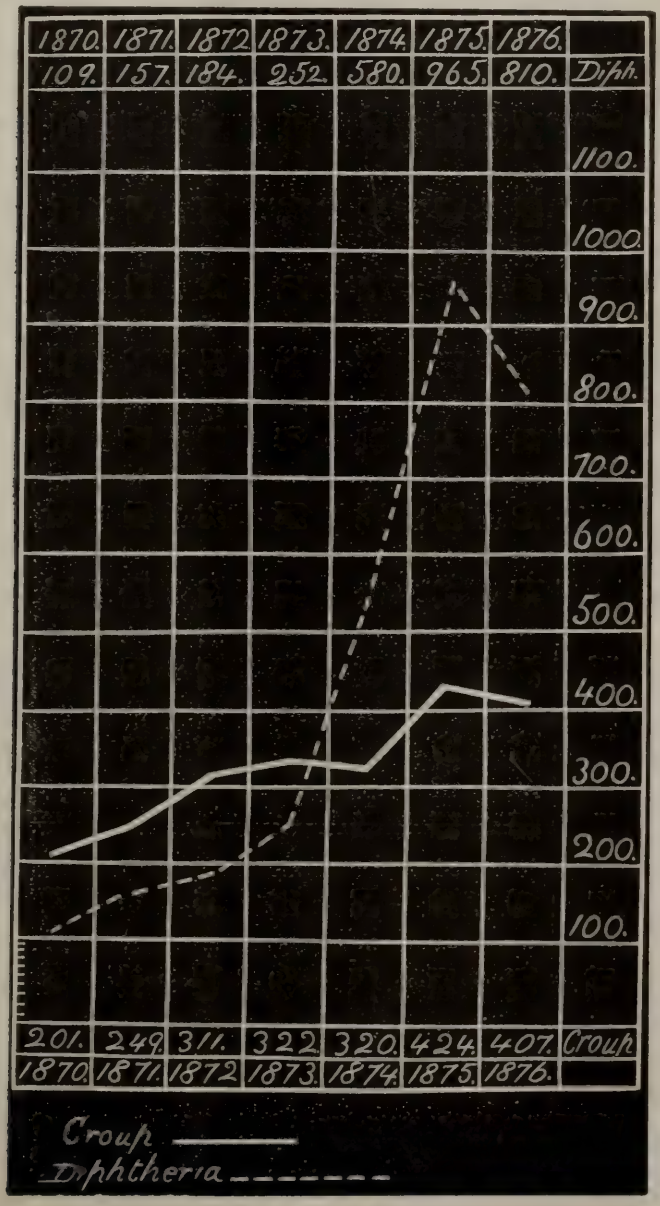
Low temperature alone is innocent of blame in the genesis of true croup. Low temperature, combined with the influences arising from residence on ground saturated with moisture and reeking with miasm, affords a combination in the highest degree favorable for its development. With the coming on of cool weather there results condensation of moisture, producing increased dampness of dwellings; into such dwellings their occupants crowd; for the purposes of warmth, every aperture which might let in fresh air is closed; of ventilation there is none; of sunlight but little; the miasms that are ever present in the atmosphere are intensified and energized; vital force is sapped; croup and diphtheria and kindred diseases increase and abound, decimating the young children that yet remain from the peculiar diseases which the same local conditions, combined with the heat of summer, have made the terror of the warm season.

Why croup should prevail in one locality and not in another—why it should prevail in cold weather and not in warm weather—the local experience, of which an analysis has been attempted, gives sufficient reasons in explanation. Why, in 1870, the fatal cases should have numbered 230, and in 1875 588, more than twice as many, receives no ex-

planation from any consideration as yet presented. The difference in population is not sufficient to begin to account for it. Slight variations from year to year might be referred to varying atmospheric conditions—temperature, moisture or prevailing winds; but even these, if proved to have been present, could not explain the enormous increase stated. It is easy enough to say that an epidemic constitution has been engrafted upon the disease. This explains nothing, is simply another way of stating the same fact. Upon what peculiar atmospheric conditions this influence depends for its existence or its power, this examination throws no light. That it exists is beyond dispute.

From this region of inquiry, that of the sanitarian, the close kinship of croup and diphtheria is again demonstrated, for simultaneously with this increase of croup to a condition of epidemic intensity, diphtheria has also manifested similar activity.

The number of deaths reported from diphtheria in 1870 was 109; in



1875 was 965; in 1876 decreasing to 810. The deaths from croup, as compiled by the committee, excluding those reported as diphtheritic croup,* in 1870 was 201; in 1875, 424; in 1876, 407. The preceding diagram shows the relative course of the diphtheritic and croup mortality waves during the years under examination—1870 to 1876.

One point only remains for examination, viz.: the proportion which these fatal cases of croup bear to the entire number of cases of the disease which have occurred. The most remarkable diversity of experience among us, in this respect, seems to have existed. The epitomized experience of thirteen physicians, in full practice in various parts of the city, is subjoined.

"Over one hundred cases conducted to a favorable issue."

"Has never seen a fatal case of croup in his own practice since employing crude kerosene by inhalation and as a counter-irritant."

"In twenty-six years' practice but five fatal cases of croup."

"A favorable change often occurs in the most desperate and unpromising cases."

"In cases properly cared for a large proportion recover."

This is one aspect of the picture; quite another is testified to by the remaining witnesses:

"In membranous croup, in children under five years of age, about eight per cent. only recover."

"Generally fatal."

"Nearly all his cases recorded in the Archives of the Board of Health."

"Never knew a child under five years of age to recover from membranous croup."

"Almost never recover; perhaps one case in a hundred."

"Among twenty-five cases but one has recovered."

"Invariably fatal."

"All cases except those seen in the beginning of the attack have ended in death."

This is an epitome of the statements received. The difference between the extremes is beyond exaggeration. It is evident that the conditions upon which the statements at either extreme are based are entirely different. Slight catarrhal laryngitis with spasm of the laryngeal muscles,

* The number of deaths reported as from diphtheritic croup, in each year, was:

1870	29	1874	71
1871	28	1875	164
1872	56	1876	128
1873	59		

or catarrhal laryngitis simply, more or less severe, evidently form the croup of one class, while the others speak only of laryngitis accompanied with membranous exudation. Catarrhal laryngitis, the result of exposure to cold, or to cold and moisture, is of comparatively frequent occurrence, even in localities the most favored; is amenable to treatment, especially when prompt; but sometimes of uncontrollable severity and with fatal termination. In all statements as to treatment and prognosis, this kind of croup is to be kept distinctly separated from that other croup, in the production of which not only cold and moisture have entered, but also, and of prime importance, a miasmatic poison, as the result of which membranous deposits gather upon the inflamed surfaces; not responding to treatment quickly; generally fatal; sometimes within a few hours of the first onset of the disease.* This is the croup which we have seen the conditions of certain portions of our city cause to be endemic therein; this it is which, occurring in young children, some of our wisest and most experienced physicians declare to be almost invariably fatal. This disease, before which the physician stands confessedly powerless—can it be met with any greater degree of success by the surgeon? In this inquiry this city of Brooklyn is more deeply interested than any other in this country.

II. Tracheotomy in Brooklyn.

More or less complete details of 121 operations of tracheotomy, done in this city for the relief of croup, have been gathered. Very few of these have hitherto been published. They constitute a fresh contribution to the literature of the subject. The names of the operators, and the results obtained in these cases, are as follows:

	Total No. cas's	Results. Recov'd	Died.		Total No. cas's	Results. Recov'd	Died.
G. H. Atkinson...	1		1	W. C. Otterson...	1		1
J. Ball.....	2	1	1	L. S. Pilcher	5	3	2
I. H. Barber.....	1		1	O. S. Pine.....	4	1	3
D. Bloodgood....	1		1	J. C. Rappold....	12	2	10
G. Buck (for Dr. C. L. Mitchell).	1		1	J. H. Raymond...	1		1
				H. N. Read.....	4	1	3
E. S. Bunker.....	2		2	H. Riedel.....	1		1
A. B. Crosby.....	1		1	F. W. Rockwell..	8	2	
G. A. Evans.....	2		2	W. F. Sanford....	1		1
G. R. Fowler....	12	3	9	S. Sherwell.....	2	1	1
M. Figueira	2		2	F. H. Stuart	1		1
H. J. Garrigues...	1		1	G. Wackerhagen .	1		1
A. G. Gerster.....	1		1	W. Wallace.....	1	1	
C. H. Giberson...	1		1	J. Watt	1		1
W. Gilfillan.....	4	1	3	W. T. White.....	1	1	
R. Hesse.....	3		3	J. S. Wight	1		1
J. C. Hutchison...	25	2	23	R. M. Wyckoff...	1		1
C. Jewett	2		2				
J. Krauter	12	4	8	Total.....	121	24	97
H. Loewenstein...	1	1					

* See Note, next page.

Analysis of Cases.

The sex was stated in 91 instances. These were—males, 52: of whom 13 recovered; 39 died. Females, 39: of whom 10 recovered; 29 died.

Age.—In recoveries, stated in 23 instances: One case occurred at the age of 52. Of the remaining 22, the youngest was 2½ years; the oldest, 11 years; the average being 5.3 years.

In fatal cases, stated in 67 instances: The youngest, 11 months; between 1 and 2 years in 12 instances; the oldest, 12 years. Average, 4.3.

Character of Attack.—This is stated to have been catarrhal in 6 instances, of whom 3 recovered, 3 died; membranous in 31 instances, of whom 12 recovered, 19 died; diphtheritic in 58 instances, of whom 8 recovered, 50 died.

Duration of Attack Prior to Operation.—Stated in 19 instances of the cases which recovered. The shortest time was 4 hours; the longest, 6 days; the average, 3 days.

Stated in 45 instances of the cases which proved fatal. The shortest time was 4½ hours; the longest, 8 days; the average, 3.5 days.

Condition of Patient at Time of Operation.—Stated in 20 instances of the cases which recovered. Apparently dead, 1; moribund, 6; nearly asphyxiated, 2; cyanotic, 3; dyspnœa intense, 3; dyspnœa increasing, prostrated, 3; dyspnœa increasing, strength still good, 2.

Stated in 78 instances of the cases which proved fatal. Comatose, 1; moribund, 18; nearly "in articulo mortis," 24; almost asphyxiated, 8; cyanotic, 7; cyanotic, with great dyspnœa, 9; feeble, intense blood poisoning, 7; strength good, dyspnœa great, 4.

Duration of Life after the Operation in Fatal Cases.—Stated in 66 instances. But a few minutes, 3; less than 24 hours, 19; died on 2d day, 13; died on 3d day, 19; died on 4th day, 1; died on 5th day, 3; died on 6th day, 4; died on 8th day, 2; died on 14th day, 1; died on 18th day, 1.

Immediate Cause of Death after Operation.—Stated in 62 instances.

1. Asthenia in 24 cases: catarrhal, 2; membranous, 6; diphtheritic, 16. One case lived 8 days; 1 case lived 18 days. The average of the remaining 19 was 32 hours.

2. Asphyxia, from accumulation of exudation below canula, in 16 cases: membranous, 4; diphtheritic, 12. Average duration, 2¾ days.

*The duration of the disease, from its inception till death, was given in 1,760 cases of children less than five years of age. Of these 22 died within 12 hours; 159 within 24 hours, and 57 per cent. of the whole number within three days. Of those between five and ten years of age, 43 per cent. died within three days.

3. Bronchitis and pneumonia in 13 cases: membranous, 3; diphtheritic, 10. Average duration, $4\frac{1}{2}$ days.

4. Death immediately after the completion of the operation—no benefit experienced, in three cases: membranous, 2; diphtheritic, 1.

5. Epileptiform convulsions, 10 hours after operation, in one instance, a child 18 months of age. Case one of membranous croup.

6. Accidental death, from carelessness or ignorance of attendants, in 5 instances. Tube displaced in 2 cases; tube obstructed in 3 cases.

Anæsthetics.—In the performance of the operation, where an anæsthetic was used, the kind was stated in 67 instances as follows:

Chloroform, 36: recovered, 9; died, 27. Ether, 27: recovered, 7; died, 20. Chloroform and ether, 4: recovered, 1; died, 3.

Two instances are recorded in which dangerous chloroform narcosis complicated the operation. Nitrite of amyl was used with apparent benefit in both instances.

The point of incision into the trachea was stated in 77 instances, having been above the isthmus of the thyroid gland in 30 cases: of whom 10 recovered, 20 died; below the isthmus of the thyroid gland in 44 cases, of whom 12 recovered, 32 died; behind the isthmus of the thyroid gland, which was severed, in 3 cases, of whom all died.

Complications of the Operation.—Troublesome hemorrhage is the chief complication noted as having been experienced, 19 instances being reported in which this occurred. In one of these, an artery of some size was wounded, presumed to have been an instance of the presence of the thyroidea ima artery.

Asphyxia and syncope to such an extent as to demand artificial respiration and the injection of stimulants for the purpose of resuscitation, is reported as having taken place in 10 instances, of whom 3 ultimately recovered.

Complications After the Operation.—Emphysema, superficial abscess of the neck, sloughing of the edges of the wound, and prolonged laryngeal stenosis are reported as having occurred, each in one instance; final recovery resulted in all these cases.

Erysipelas of the wound developed in one case, with a fatal termination.

Of the cases that recovered, in one the canula was retained more than 12 months; in 1 instance 4 weeks; in 14 instances between 1 and 2 weeks; in 7 instances less than 1 week, the shortest time having been 3 days.

Remarks.—It will be seen that in nearly every instance tracheotomy was not resorted to until the patient's condition had become desperate; nevertheless, 20 per cent. of those operated upon were rescued from the

death impending and restored to health. It has been thought that the proportion of recoveries in cases occurring in private practice would be greater than that which had resulted in hospital practice. A recurrence to the statements which have been made as to the conditions in which membranous croup is developed, will show the error of such an expectation. Occurring among the class of our population described, the treatment pursued in localities so unfavorable, with attendants unskilled and ignorant, the chances for recovery must be less than that which a well-ordered hospital would afford. These statistics from private practice, therefore, represent the results which may be expected in the most unfavorable circumstances. They are especially trustworthy for the reason that equal care has been taken in their compilation to obtain records of unsuccessful as of successful cases.

A classification of the cases operated upon according to the character of the attack, whether catarrhal, membranous or diphtheritic, has been given; but the uncertainty as to the accuracy of the diagnoses given, which was stated as existing in connection with the records of the Board of Health examined, is likewise found here, so that no deductions of value can be drawn from the figures as given.

An examination of the causes of death after operation is fertile in subjects for reflection and discussion.

The three chief causes of death, subsequent to the operation, were asthenia, asphyxia, from accumulation of exudation below the canula, and bronchitis and pneumonia. Of the 62 cases in which the cause of death was recorded, 20 died by asthenia, living, upon the average, 32 hours; 16 died asphyxiated, living, upon the average, two and a half days; and 13 succumbed to bronchitis and pneumonia—simply or combined—after a struggle of four and a half days.

This teaches that the first and most quickly operating danger met by a tracheotomized patient is *exhaustion.* In the production of this exhaustion there are two chief factors—viz.: *a.* The unintermitting violent muscular efforts put forth by the patient in the respiratory act, an element of danger in prolonged dyspnœa not sufficiently realized in general; *b.* Blood poisoning. To the depressing effect of the primary miasmatic poison (whether diphtheritic or otherwise), which has depraved the blood, as an essential pre-requisite to the development of the disease, is added the toxic effect of deficient oxidation. These conditions have exerted their full and combined power previous to the operation; the more prolonged the period of dyspnœa previous to operation, the more intense their effect.

By the operation, undue muscular effort and imperfect oxidation of the

blood are eliminated from the case; but the results of their former presence remain in a condition of continued exhaustion, from which the vital powers of the patient, even in his changed circumstances, are not sufficient to rally him, and speedy death ensues. In cases of recognized diphtheria, the continued depressing effect of its blood poison is felt by all as a powerful agent in the production of death by asthenia after operation. In like manner, though to a less degree, are the vital forces called upon to struggle against a peculiar blood poison in those cases classed as membranous simply.

The ability of the patient to rally from this exhaustion is diminished by the damage which has been inflicted upon the lungs by the very efforts which have been made to inflate them. As the result of the prolonged stenosis of the larynx or trachea, the rarefaction of the air within the alveoli, and the extraordinary exertions of the respiratory muscles in accomplishing the expansion of the thoracic cavity, emphysematous dilatation and œdematous infiltration have so damaged the lungs, that when air is again fully introduced it cannot be utilized—it is too late!

If the vitality of the patient shall not have been exhuasted so far but that he has been able to rally from this state of exhaustion, and has escaped this immediate danger, the second element of danger which these cases teach to be met is that of the extension of the membranous deposit to the portions of the trachea and of the bronchi below the opening of the canula, and its accumulation to such extent as to cause death by asphyxia at last. This danger having been escaped, with the prolongation of life bronchitis and pneumonia present themselves as a frequent cause of death.

Niemeyer says* that "the comparatively insignificant results of tracheotomy in protracted croup are due solely to this complication, whose frequency can usually be shown to be a necessary result. When the thorax expands and the alveoli enlarge without admitting a proportionate quantity of air, the air in the bronchi and alveoli must become rarefied, and must act upon the bronchial mucous membrane and inner wall of the alveoli in the same way as a cupping-glass does upon the skin, producing hyperæmia and increased transudation from the vessels, in consequence of the diminished pressure upon the walls of the vessels."

Bronchial catarrh results from the mechanical conditions thus described not only, but also in the usual manner by extension from the mucous membrane of the larger air tubes, or is excited by the continued action of the conditions which determined the primary laryngitis. The inspiration of cold air, unwarmed by passing through the upper air pas-

* Niemeyer, Pract. Med., Vol. i, p. 24.

sages, or the inhalation of irritant substances through the canula, may be sufficient to excite fatal bronchitis in cases that had previously been promising.

In several cases under examination a temporary fall in the temperature of the air being respired by the patient was followed immediately by the development of fatal bronchial inflammation.

The five deaths from the carelessness or ignorance of attendants, gives force to the frequent statement that constant watchfulness and presence of mind are demanded upon the part of those to whom the care of patients is to be confided after tracheotomy.

The propriety and safety of the use of anæsthetics in many cases is confirmed by the experience recorded. A very little of any anæsthetic usually suffices. Common prudence would dictate its sparing use. Generally it may be dispensed with after the first incision is completed. The special danger inherent in the use of chloroform, happily counteracted in the two instances noted in the analysis of cases by the use of nitrite of amyl, points to the adoption of ether as the anæsthetic most proper for use in tracheotomy.

Although in the greater number of instances the trachea was incised below the isthmus of the thyroid gland, in a large number the high incision was adopted, the cricoid cartilage being also divided in many. These latter appear to have resulted quite as favorably as the former. No special evil result is reported as having followed the division of the cricoid cartilage. As being more simple, and executed with more ease and facility than the low operation it recommends itself in many cases.

The extreme condition in which many cases are before being subjected to operation, is shown by the ten instances recorded in which, at the completion of the operation, apparent death had taken place, demanding the utmost promptness and skill upon the part of the operators for their resuscitation. The three complete recoveries noted are three lives snatched from death!

RÉSUMÉ.

In the first part of this report, croup was examined by the light of the special conditions by which it was demonstrated to be surrounded in this city of Brooklyn. The results condensed are presented in the following *résumé.*

The term croup, comprehending *all forms of acute inflammatory affections of the larynx or trachea which may produce narrowing of their calibre to such an extent as to occasion serious prolonged dyspnœa,* was found practically to embrace three conditions, designated respectively

as *catarrhal croup*, an inflammation of the mucous lining of the larnyx and trachea, in which the secretion present, whether scanty or abundant, is always liquid.

Membranous Croup, an inflammation of the same mucous surfaces, in which the secretion present is formed into a false membrane of varying thickness, and more or less intimately adherent to the mucous membrane, which it covers.

Diphtheritic Croup, in which the local condition is identical with that known as membranous croup, but which is recognized as a part of a general diphtheritic infection.

These three conditions are so frequently confused, the first with the second especially, and the two last with each other, that great uncertainty with regard to the meaning of terms, and confusion as to modes of treatment and results to be expected therefrom, has arisen.

Catarrhal croup results from exposure to cold, or to cold and moisture.

Membranous croup demands for its production not only cold and moisture, but also a miasmatic poison. The character of this poison is allied to that which is active in diphtheria.

The climatic and telluric conditions of large portions of the city of Brooklyn are favorable to the development of the worst forms of croup.

The effect of these conditions is intensified by the social condition of the inhabitants of these localities.

Croup is one of the chief fatal diseases of Brooklyn.

An epidemic influence has impressed upon it an activity at the present time double that of five years ago.

In the second part of this report the results of 121 tracheotomies for the relief of croup have been examined. With very few exceptions, in these cases the operation was not resorted to until death was imminent, every other resource having been exhausted; 24 recoveries resulted, 20 per cent. of the whole number of operations, a demonstration that *even in the last extremity the operation of tracheotomy holds out material hope of recovery.* In the cases which terminated fatally, in a large majority, death was found to have resulted from causes directly dependent upon *the prolonged dyspnœa to which the patient had been subjected previous to operation.*

III. Facts Discussed—Conclusions Stated.

In attempting to form a just estimate of the proper place in the treatment of croup to be assigned to tracheotomy, the following questions require an answer:

1st. What occasions death in croup?

2d. What is the expectation of life in croup?

3d. How will tracheotomy prevent death in croup?

4th. Will tracheotomy in any case increase the danger of death in croup?

5th. What are the objections to tracheotomy?

6th. In what cases is tracheotomy indicated?

7th. In what cases is tracheotomy contra-indicated?

8th. At what time should tracheotomy be resorted to?

1st. *Death in croup* may result from carbonic acid poisoning, inducing general paralysis; from croupous bronchitis; from diffuse catarrh of the air passages; from pneumonia; from œdema glottidis; from acute œdema of the lungs, and from suffocation from complete occlusion of the glottis by a piece of loosened membrane.* These different conditions may be present in varying number and degree in different cases. Exhaustion from prolonged excessive muscular efforts in respiration is an added element of danger in all cases except those in which death occurs within a few hours of the inception of dyspnœa. Diphtheritic septicæmia, when present, intensifies the action of the other causes, and may itself alone determine the fatal termination.

2d. The expectation of life in croup has been discussed already in this report in another connection. From the considerations stated, we conclude that the expectation of life is less in cases occurring in children under five years of age, than when children above that age are affected. Unfortunately, the vast majority of cases occur in children less than five years of age. That in *catarrhal* croup a large majority of the cases will recover, with proper treatment; in *membranous* croup recovery rarely takes place—the proportion of recoveries is merely large enough to show that a case may not necessarily be utterly hopeless. In *diphtheritic* croup recovery takes place yet more rarely. The instances in which it has occurred are so exceptional, that they afford no ground for hope in any given case.

3d. Tracheotomy will tend to prevent death in croup by making possible free access of air to the lungs, and thus: 1st. Relieving or preventing carbonic acid poisoning, and its sequel, general paralysis; 2d. Supplying the blood freely with the best of tonics or stimulants, oxygen, it assists in the struggle to eliminate the special blood poison present, favors the limitation of the disease and lessens the danger of croupous bronchitis; 3d. At once ending the cupping-glass action, exerted upon the whole surface of the respiratory tract below the larynx—heretofore described—it lessens the danger of the occurrence of diffuse catarrh of the

* Steiner, op. cit., p. 255.

air passages, of pneumonia, and of œdema of the lungs, and promotes recovery from these conditions when not already too extensively developed; 4th. Rendering respiration free and easy, it prevents exhaustion from excessive muscular exertion, and tends to relieve it, if already present. It tends to prevent death by eliminating from the possible causes of death œdema glottidis, and occlusion of the glottis by a piece of loosened membrane, through the establishment of a temporary opening for the entrance of air at a point between the glottis and the lungs.

It prolongs life, and thus gives increased opportunity for the action of remedies, and for a rallying of the powers of nature sufficient to throw off the disease.

. 4th. The causes of death incident to croup itself being to so large a degree antagonized by tracheotomy, upon the question whether the new dangers introduced by the operation are greater in degree than those previously present, depends the answer to the question, *Will tracheotomy in any case increase the danger of death in croup?*

Upon this point each case must constitute an individual study; the question must be raised and settled anew for that particular case.

Upon the condition of the patient at the time of the operation and upon the skill of the operator, depend largely the magnitude of the new dangers incurred. Of these the first, in time and in importance, is hemorrhage, both during and after the operation. 2d. Traumatic fever, especially severe in children less than two and a half years of age. These are the two most important dangers. In addition, phlegmonous inflammation, erysipelas, gangrene and diphtheria of the wound may occur. Emphysema, mediastinal abscess and ulceration of the trachea also may complicate the case.

The inhalation of cold air or of irritating substances through the tube are additional sources of danger.

The obstruction of the tube by pieces of membrane, or by the gradual accumulation within it of dried mucus, and the accidental displacement of the tube, may cause death.

Nearly every one of the conditions enumerated may be avoided by skill and carefulness in the management of the patient. Those which cannot be avoided may be greatly mitigated by treatment. Some can only happen as the result of gross carelessness or ignorance. They thus become, in general, insignificant, when contrasted with the imminent dangers present in the disease for the relief of which the operation is to be instituted. The circumstances surrounding each case, however, to repeat, must determine the conclusion in that particular instance.

5*th. Objections to Tracheotomy.*—A most important class of objections is

purely sentimental in character. The extreme reluctance on the part of friends, already overwhelmed with grief at the sufferings of a beloved child, to subjecting it to any new suffering is often insuperable.

The terrors surrounding the operation and the amount of pain resulting to the patient are greatly exaggerated in their minds. The possibility that, after all, recovery may not take place, and by the operation the sufferings of the patient will only have been prolonged, adds force to the previous considerations. These objections are the first to be considered at the bedside. By the earnest and enthusiastic surgeon, thoroughly imbued with a belief in the value of the operation, they can in most cases be overcome. By the surgeon or physician, who is himself greatly influenced by the same sentimental considerations, and who is uncertain in his convictions, after all, as to the value of the operation, they will be strengthened, rather than overcome. As objections to be weighed in determining the real value of a proceeding they can have no place. Three objections of a different character are frequently urged. 1st. If performed before the patient is *in articulo mortis*, it may have been unnecessary, for a possibility exists that the patient might have recovered without it; if delayed till that time, the hope of benefit to accrue is very small, therefore it is to be rejected. The conditions upon which the soundness or fallacy of this reasoning is based have previously been fully considered. Though some cases are on record in which after the condition of the patient had become most desperate—after, indeed, tracheotomy had been urged as the only resource left, but had been refused—a favorable change had occurred, and recovery had taken place; yet the considerations already fully set forth in this report, demonstrate that in any given case such an event is to be regarded only as a bare possibility; the probabilities are all that it will terminate fatally. Even should it recover from the immediate attack of croup, it cannot be otherwise, in the great majority of cases, than with permanently damaged lungs, the result of the prolonged laryngeal stenosis which has been present. It must not be overlooked that these cases of unexpected recovery are almost uniformly in children above five years of age. During the past winter eight cases of severe croup have come under my observation; in all tracheotomy was advised; in six it was refused or procrastinated until too late to be of service; with one exception these were all in homes of comfort, some even of wealth, and all received every attention which money could command, or love and medical skill could suggest. They all died. In the remaining two instances, tracheotomy was done at once upon the supervention of threatening symptoms; one was in the case of an anæmic child, living in a cellar in the most abject poverty, debilitated by want

of proper food and of sunlight, the croup a complication of general diphtheria. This child died. The second case, diphtheritic likewise, but in a home of intelligence and comfort, recovered. In view, therefore, of the very small probability, in any one case, of the condition taking place upon which this objection is based, the conclusion is unavoidable that it is of no weight as contrasted with the great benefits demonstrated to result from the timely performance of tracheotomy. That part of this objection depending upon the slight prospects of good resulting from the performance of the operation at a certain time is an objection not against the operation, but against its delay till that time, and will come up for consideration in the answer to the eighth question. The second of these objections is like unto the first, and grows out of it. In the words of an eminent practitioner to the writer, tracheotomy "robs the sufferer of the slight chance remaining for a possible favorable change." Does it? If so, then all that has been said in answer to the first and third questions of this series is wrong. If what has been stated there is correct, then in the most unfavorable circumstances it increases the chances for recovery vastly. Only in one possible event can any chance for recovery be taken from the patient by the operation—that is, when performed in so bungling a manner that it is a butchery rather than an operation; and then it is not the operation of tracheotomy that does the injury, but the wretched operator!

Thirdly, new foci of irritation, infection and gangrene may be established as the result of the operation. This is true more especially of the operation in cases of diphtheritic croup. The more intense the blood poisoning, the greater the danger from the complications in question. But the very severity of the symptoms constitute the loudest call for the operation, that imperfect aëration of the blood shall not intensify yet more the blood poison; that a second blood poison shall not complicate the case; and that the tonic and stimulant effect of the oxygen of the air may not be denied as a remedy to the failing vital forces. Shall a possible minor danger prevent the adoption of the means demanded for the relief of the immediate great danger? Such considerations are not permitted to influence the physician in other conditions.

6th. Tracheotomy is indicated in all cases of croup in which laryngeal stenosis becomes so great as to become an element of danger, either immediately, by rapid suffocation, or by a more gradual asphyxia, resulting from a slow accumulation of carbonic acid in the blood; or when, by its long continuance in a less severe form, danger is imminent of the production of diffuse bronchial catarrh or acute œdema of the lungs, or from the exhaustion occasioned by prolonged excessive muscular exertion in sustaining respiration.

It is unnecessary to defend these indications in detail. They are the logical and unavoidable conclusions of the facts which have been already stated. Accept the premises as true, and the conclusion cannot be rejected.

7th. When is tracheotomy contra-indicated? The one indication for tracheotomy being present, laryngeal stenosis to such a degree as to be a source of danger either directly or indirectly, there can be no contra-indication to the operation. If the danger is not from the stenosis, but from septicæmia dependent upon other conditions, as in many cases of diphtheria, the indication for the operation does not exist. But whatever the degree of septicæmia, if the stenosis is great enough to materially intensify it, it does not constitude a contra-indication to the operation. Existing pneumonia, bronchitis, exhaustion, even apparent death, instead of contra-indicating, do the more distinctly indicate it.

These and other complications impair the prognosis, but do not justify the surgeon in abandoning to his fate a suffocating child. The literature of the subject abounds in instances in which, despite the gravest complications, recovery has been secured.

8th. At what time should tracheotomy be resorted to?

This is a question of the utmost importance to the patient, upon which widely differing opinions have been entertained by surgeons. In nearly all the cases reported in this paper it was resorted to only as a last resource, when death was imminent. By large numbers of the profession it has been regarded as hardly justifiable under any circumstances. On the other hand, Trousseau's latest utterance on this subject was in these words: "I still maintain that the earlier the operation is performed, the greater are the chances of success."*

The latest systematic writer on croup, Steiner,† says: "I agree with those writers who urge an early operation, and do not defer it until urgent symptoms of carbonic acid poisoning have manifested themselves."

This, after all, is the focal point of all discussions upon the subject of tracheotomy in croup. Upon the determination of this bears all the discussion which has now preceded. It is a point to be determined by the cool judgment of the physician in each individual case, in the plane of reason and common sense, his decision founded upon a complete weighing of all the elements present in the case. Whether any or all of the conditions are present which have now been discussed as a part of croup, he is to decide. If in his opinion they are, then the following question is for him to answer:

* Trousseau, Clin. Med., Philad. Ed., vol. i, p. 431.

† Steiner, op. cit., p. 269.

How long am I justified in deferring the application of a remedy which at once puts an end to grave sources of danger now present to my patient, which, with skill and carefulness on my part, will itself add no new material dangers, and which will prevent with certainty, in the event of recovery, the entailing of diseased conditions which are probable in the same event without it? The most approved methods of treatment have failed to arrest the course of the disease. There is a steady progression in its gravity. A possibility exists, however, that even at the last moment a favorable turn may take place and recovery follow. In all probability, nevertheless, it will steadily advance to a fatal termination. Shall I now give him the benefit of tracheotomy, with its unquestioned advantages, or shall I wait yet longer? Each hour of waiting now will lessen rapidly the hopes which even tracheotomy affords. What is my duty to my patient? What other answer can there be than that *justice to my patient, justice to myself, fidelity to the profession I represent, all unite in demanding that* NOW, *early, before the development of conditions which will make any interference but a forlorn hope, tracheotomy should be done!* In thus answering this question, I wish it distinctly understood that I do not advocate hasty and indiscriminate operations. It is not to the exclusion of other treatment that tracheotomy is advocated; but when, despite our best efforts to the contrary, the case continues to increase in severity, or to remain with its already developed severity unmitigated; when, in view of all past experience, we have little to expect but its passing from bad to worse—then it is that tracheotomy is imperative. It would be idle to attempt a description of the symptoms which indicate that a case has reached the stage thus described. No one symptom constitutes its pathognomonic feature. No two cases will be alike. All the elements of a given case must be considered. A physician by whom a case has been studied in this way will rarely be compelled to wait until his patient is *in articulo mortis*, before he can perceive its hopelessness.

In concluding this estimate of the proper place in the treatment of croup to be assigned to tracheotomy, attention is directed to the fact that for every conclusion the facts upon which it is based have been given, and each fact or set of facts has been followed to its logical conclusion. If the conclusions are wrong, it is because of an error in the facts. The closest criticism of the statements made is invited—a criticism in all fairness and candor—for it is the truth only that is sought. If that which has been presented in this report is true, then the conclusions reached are of living interest to Brooklyn's practitioners not only, but also to all its people, so many of whom this day are cherishing the memory of children needlessly lost.

Another consideration must not be overlooked—one ever present, and very proper, which must influence a physician as to the readiness with which he will have recourse to tracheotomy—viz., the confidence or lack of confidence which he may have in his own knowledge of the operation, and in his skill as an operator. Only by familiar knowledge and great skillfulness can he hope to insure to his patient the full benefit of the operation which he proposes. If he feels that he has not these, he cannot be blamed for declining to exchange the dangers now present for those he knows not of. But when his patient is already in the last extremity, not even distrust of himself can he plead as an excuse for refusing to do his utmost to rescue his patient from his peril. Skill in operating is of vital importance in tracheotomy. He errs who thinks it a minor operation in surgery, or that the responsibility of its performance is a thing to be lightly assumed. But he errs quite as seriously who, because it is a heavy responsibility, will therefore decline it altogether, and will lightly and jauntily dismiss it to the limbo of exploded procedures. The nearly two-score names, the results of whose operations in this city are recorded in this report, prove that this responsibility is accepted by many. That they have the knowledge and skill requisite for its discharge is shown by the proportion of recoveries which they have secured—a proportion equal to that claimed by the most eminent tracheotomist of the metropolis.*

The sad circumstances which attended the last illness and death of one of the youngest of our number,† to do honor to whose memory so many of us gathered a few days since, lend a peculiar interest to this theme at this time. Animated by enthusiasm for his calling and devotion to the interests of his patient, he did not hesitate to jeopardize his own life in his efforts for its relief. He died! One more name added to the long list of moral heroes, the pride of our profession, who, unsupported by the excitement of the battle-field, unstimulated by hope of public applause, often not even appreciated for their efforts by those for whom they labor, have gone forward in the discharge of duty, aware of peril, but regarding it not, till overtaken by death.

This divine enthusiasm, this wonderful heroism, is the peculiar birthright of the true physician. What a wonderful tribute to the nobility of our profession is the acceptance upon the part of the public of such devotion as a matter of course! It is this alone which, in the great majority of

* A. Jacobi, Medical Record, 1877, p. 109.

† Dr. N. G. Hutchison, died April 9, 1877, aged 24 years, from diphtheria, contracted by assiduous watching at the bedside of a child suffering from diphtheritic croup, for whose relief he had performed tracheotomy.

cases, incites him who has to battle with croup. Born of poverty and its inevitable accessories, this disease rarely holds out any other reward to the physician in its treatment than a consciousness of a good deed done. In this report the effort has been made to increase the responsibility of the physician in the treatment of this disease. Gratuitous, often perilous labor will result from the acceptance of its conclusions. But lives will be saved; and if but one useful life is saved that would otherwise have been sacrificed, the consciousness of having contributed to such a result will be reward enough for whatever labor the preparation of this report has cost.

FLEXIONS AND VERSIONS OF THE NON-GRAVID UTERUS.

BY J. R. VANDERVEER, M.D.

In presenting the subject of Flexions and Versions of the Unimpregnated Uterus, I am aware that I am touching a subject well ventilated, and one under discussion, more or less, for the past thirty years.

These lesions of the uterus being of almost every-day occurrence in practice, their treatment devolves not only upon the specialist, but upon the general practitioner as well; and he, above all others, is competent to observe the *ultimate* result of remedial measures, from his intimate relations to, and his lengthened observations of, the patient, as family professional adviser and attendant.

As the discussion of the affections we have under consideration has generally taken place before bodies devoted to gynæcology as a specialty, I have concluded, on being kindly invited to prepare a paper to be presented to this Society, to choose the subject stated. In so doing I have no very novel views to offer; but I desire chiefly to introduce the subject before the Society, well knowing the advantages of discussion in bringing out unwritten scientific material. I therefore beg to contribute my mite toward the furtherance of this object.

Prof. Thomas, of New York, in his admirable work on "The Diseases Peculiar to Females,"* quotes, in a chapter entitled "General Considerations upon Displacements of the Uterus," from the statistical part of an article by Dr. Alfred Meadows, of London, on uterine displacements. On referring to this article, *in extenso*, of Dr. Meadows, which we find in

* Thomas' "Diseases Peculiar to Females," p. 316.

the London *Lancet* of October, 1868, we observe he commences as follows:

"There are few disorders connected with the female generative organs which have received more attention, or have been the subject of more discussion, than those I propose to consider.

"Perhaps it might be thought that I have chosen a subject which has already been treated almost *usque ad nauseam*. But, in truth, if it be so, there is little credit derivable from the fact that even now the most adverse opinions are held by equally competent observers, on some of the cardinal points in the pathology of these affections."

All of which might be, in the main, advanced as applicable to-day.

On examination of the early writers on this branch of gynæcological science at the beginning of the present century, we find that the malposition of the uterus most alluded to was *prolapsus*, versions being acknowledged or alluded to chiefly as affecting the *gravid* uterus. Prof. Schroeder,* of Erlangen, Bavaria, says that before the present century versions of the uterus received attention from the difficulties attending parturition from backward displacements; and that few cases of deviations in nulliparæ were published, and those had been accidentally discovered in autopsies, or recognized by some unusual complication. Prof. Thomas, in his work already alluded to, informs us that these affections were known to the earliest practitioners, some of them even describing latero-version, but versions and flexions were confounded; and that the researches of those scientific workers were not directed to the non-pregnant organ.

The credit of first describing a case of retroflexion of the non-gravid uterus is generally given to Denman, which description was made about the beginning of the present century, M. Amiline writing concerning anteflexion in 1827.

From this period until the announcement in June, 1843, in the London and Edinburgh *Journal of Medical Science*, by the late Prof. James Y. Simpson, concerning the superior facilities afforded by his "uterine sound or probe," as he then styled it, the writers on the subject of flexions and versions regarded as authorities were, in Germany, Schmidt and Tiedemann; in France, Madame Boivin and M. Dugés.

The advantages afforded in diagnosis by the sound of Sir James Simpson were, upon the whole, promptly acknowledged by gynæcologists, Kinisch being one of the earliest to adopt it; and he became its champion in Germany, and soon devised what was regarded by him as an improvement on the original instrument; Lisfranc, being the advocate of the views of the Scotch professor among contemporary French surgeons. Simpson, with the intellectual foresight which he possessed in so great

* Ziemssen's "Cyclopædia of the Practice of Medicine," vol. x, p. 157.

a degree, and with the enthusiasm which was his characteristic trait through life, after having cleared away much of the uncertainty which surrounded the diagnosis, and in a great degree the pathology, of uterine flexions, plainly perceived and zealously announced that the true remedial indication in these affections was *inter-uterine;* whence arose, under his hands, the inter-uterine stem pessary.

Simpson, at that period, regarded versions and flexions as *primary* affections; and as giving rise to almost all of the ailments then designated as subacute and chronic inflammation, congestion, the irritable uterus of Gooch, and the like.

Brilliant results seemed at first to follow the use of the stem pessary in the practice of Simpson himself, and other prominent gynæcologists, in the treatment of uterine flexions ; and we find successful cases recorded in the London and Edinburgh *Journal of Medical Science*, Sept., 1843.

The use of the sound for purposes of diagnosis had not become as firmly established in Great Britain as in Germany, or its use had fallen off somewhat; as in May, 1848, in the *Dublin Quarterly Journal*, Simpson again directs the attention of the profession to the superior advantages of his sound in diagnosticating retroversion, and distinguishing between it and "fibrous tumors in the posterior uterine wall, sarcomatous tumor, puerperal hypertrophy, ovarian tumor in its earliest stage, pelvic cellulitis, extra-uterine conceptions lodged between the uterus and rectum, and from organic disease in the anterior wall of the rectum."

In the *British Record*, June, 1848, Dr. Protherre Smith states, in contradistinction to the notion then prevalent that uterine deviations were rare affections, that they were "very common;" and he agrees with Prof. Simpson as to pathology and treatment, as well as in the usefulness of the uterine sound for purposes of diagnosis. In like strain Beattie and Rigby, of Dublin, published their convictions and recorded their observations.

We soon find, however, from the tenor of contributions to the medical journals of that period, that the sound cannot be safely used except with all caution, even for purposes of diagnosis, and still less can the inter-uterine stem pessary be applied in all cases of uterine flexion with impunity. The first report I find of a fatal result following the use of the stem pessary happened in its employment for the removal of a state of sterility supposed to depend upon a condition of retroflexion of the uterus. The case is recorded in Guy's Hospital Reports, vol. vi, part ii, October, 1849. The details were furnished by Mr. Bransby Cooper to Dr. Oldham, who published them in the volume of reports just alluded to. Peritonitis followed the use of the stem pessary in this case, terminating fatally in three days after the onset of inflammation.

The introduction, in 1852, or thereabouts, of the "Lever Pessary," by the late Professor Hodge, of Philadelphia, was at once well received by the profession at home, and gradually abroad; and modifications of this instrument are unquestionably at the present day more used than any other form of pessary, independent of extra-vaginal support.

In 1863 the stem pessary question we find to be still in agitation in the ranks of British gynæcologists. Barnes, Graily Hewitt, Routh and others being in approval of *some* form of inter-uterine support, and Clay, of Manchester, Oldham, Henry Bennet, Tilt, of London, and Greenhalgh, deprecating the use of inter-uterine interference, and declaring it dangerous; Dr. Greenhalgh, however, approving the use of sponge tents within the cervix.

About at this time arose what has been termed "Extreme Surgical Tendencies" in the treatment of uterine diseases, and discussions were had before the different Obstetric Societies, British and other, both in favor of and against this tendency. American gynæcologists then, as now, were in no wise behind their professional contemporaries abroad in the departments of diagnosis and treatment, but being, like some of their British compeers, rather behind continental observers in the line of pathology.

As illustrative of the number of contributions to the literature of uterine deviations at this period, I need only mention as some of the principal contributors, from 1843 to 1868, the names, in addition to those already alluded to, of Moreau, Amussat, Velpeau, Aran, Kinisch, Gebert, Deville, Sömmer, Mayer, Rockwitz, Valleix, Dechambre, Boulard, Bauer, Scanzoni, Avrard, Latour, Depaul, Rokitansky, Garin, Virchow, Danal, Gaussail, Freund, Farrot, Klob and Seifert.

Having now, *calamo currente*, brought some of the prominent events in the history and literature of uterine flexions and versions in the non-pregnant uterus down to the period alluded to in the beginning of this paper, which period is so recent that it requires no further allusion to, except such as may come up in the treatment of the subject *en passant*, I proceed to certain points which seem of practical importance in pathology, etiology, diagnosis and treatment.

Organs may be in an abnormal condition as far as position is concerned, either congenitally, or they may be in a condition of abnormality, subsequently developed, which condition may be suddenly produced or gradually acquired, and yet if *nutrition*, and in consequence *form*, be not interfered with, and the natural *functions* be unimpaired, they can hardly be called in a *pathological state*.

The uterus—whose functions in the adult female are preparatory in

nidation, eliminative in denidation (menstruation), recipient in impregnation, protective and nutrient in utero-gestation, and expulsive at parturition—differs from every other human organ in the multiplicity of the offices it is called upon to perform. Hence a change in position, and sooner or later in form, is so much the more likely to disarrange some one or more of its functions, and render its condition pathological. The natural position of the uterus being maintained by four agencies in the nature of ligaments: utero-pubic (round) ligaments; trans-pelvic (broad) ligaments; utero-vesico-pubic (utero-vesical) ligaments, and utero-recto-sacral (utero-sacral) ligaments, and in addition to these ligamentous agencies, by the support of the vagina from below, together with surrounding connective tissue, it naturally follows that some and ultimately all of these factors in the maintenance of uterine equilibrium become disarranged in flexions and versions of the organ.

It will now be in order to ascertain in what degree each of these supporting agencies contributes to keep the uterus in such a position that it may normally perform its several functions.

The round ligaments are, obviously, the natural antagonists to the displacement of the corpus uteri backward. Klob affirms that those authors are correct who consider these ligaments to be prolongations of uterine tissue, and, according to Rokitansky, their uterine origin is particularly firm; their lower fibres passing downward and along the sides of the cervix are reflected forward, thus assisting in the formation of the anterior fornix of the vagina. This anatomical peculiarity contributes largely to firmness of support at the uterine extremities of the ligaments; but this is more or less modified by their oblique and externally convex course, and by their vulvar attachment to soft and yielding tissue. The round ligaments, evolved from the ducts of the Wolffian bodies, together with the ovarian ligaments, continue their development farther, as we have seen, than the latter, and become more complicated in structure, and, according to Klob, are not to be considered as mere remnants of the "Gubernaculum Hunteri," but are capable of offering considerable resistance to the backward displacement of the corpus and fundus uteri; particularly when the backward inclination of the organ renders them straight and tense, while their externally convex course, from origin to insertion, enables them to give the necessary mobility to the womb; and these ligaments, yielding and lengthening—in a word, developing—in equal degree and synchronously with the walls of the uterus, in the progress of utero-gestation, like the uterine walls, undergo *involution* after parturition, and their tonicity becomes quite, or nearly the same, as before impregnation.

The broad ligaments, obviously, when healthy, contribute toward preventing latero-version and latero-flexion, and also in some degree prevent the displacement of the corpus uteri backward or forward.*

The utero-vesical and utero-sacral ligaments, with the surrounding cellular connective tissue, aided by the tonicity of the vaginal walls, are also of the greatest importance in the pathology of uterine versions and flexions, as will be alluded to further on.

Flexions and versions of the uterus are, as we well know at the present day, considered by standard authors as totally different affections ; differing not only as regards the form and position of the organ, but greatly different in pathological anatomy, especially when of long standing ; but it is not so plain that their etiological conditions so greatly vary. Taking for granted that there should be impaired utero-pubic support, by a pathological state of the round ligaments—namely, lengthening or shortening, and also, perhaps, impaired trans-pelvic support, from abnormality of the broad ligaments—the corpus uteri then left free to fall backward, on the one hand, and on the other to be drawn forward, the question arises, What will, then, the deviation resulting from this state of affairs be? In the determination of this query, the important part played by the utero-vesical and utero-rectal connection becomes apparent. These ligaments, with their auxiliary connective tissue, called by Aran "the axis of suspension" of the uterus, in a state of health, allow, or rather compel, the organ to move on a pivotal point, backward, forward and laterally, the uterus describing an arc of a circle, with a radius extending from this axis of suspension to the extreme convexity of the fundus. Now should it so happen that the round ligaments be in a state of pathological relaxation, and at the same time the vesico-recto-sacral attachment be normal, the tendency of the uterus *above* this attachment to fall backward would only be antagonized by the tonicity of the uterine walls. Should this mural tonicity be impaired, from whatever cause, retro or latero-flexion would result, in a degree commensurate with the lengthening of one or both of the round ligaments, and the peculiarly relaxed condition of one or the other of the peritoneal folds constituting the broad ligaments. *Per contra:* in cases where the uterine walls happened to be in a *physiological* condition, co-existently with abnormal mobility of the axis of suspension, natural or acquired, there would result an aggravation of the *true* position of the uterus—in other words, an *anteversion*—provided there was no stretching of the round ligaments ; but where such abnormality of the round ligaments was present, all things being equal, we would find a *retroversion* in some one of its degrees.

*Thomas' "Diseases of Women," p. 318.

This view of the pathology and causation of flexions and versions of the uterus was held as long as thirty years ago. Dr. Beattie, in the *Dublin Journal of Medical Sciences*, November, 1847, stated that :

" In retroversion the long axis of the organ becomes nearly parallel to the plane of the brim, the womb rotates, as it were, on its horizontal axis; hence the fundus uteri sinks backward into the cavity of the sacrum, and the os and cervix rise to the symphysis pubis. In anteflexion no such movement occurs."

In the next year, Dr. Protherre Smith, in the *British Record*, January, 1848, wrote of the cervix uteri as remaining stationary in flexions, and of the long axis of the uterus being more or less *curved* in these affections, while this uterine axis remains straight in versions. But Dr. Smith made no allusion to mobility of the cervix, in these last displacements.

From among the more recent authorities, in view of elucidating the part played by the lower attachment of the uterus in flexions and versions, I quote from Scanzoni.* In reference to flexions of the womb he states as follows :

" Many authors designate the point bordering on the internal orifice as that where most often the angle of flexion is found. It is there that we have observed it in all the cases we have studied. The reason of this appears to be simple. For here is the point where the vagina joins the neck of the womb, which is more or less fixed in its position, while the body, being more voluminous and weighty, is more movable, and can be easily displaced, either by its own weight or by an exterior force. When such motion takes place, the designated part will evidently be that which will yield the least.

" The degree of flexion is very variable. It may be limited to a slight curvature of the organ. The angle is then very obtuse. In the other extreme, the womb is completely folded double, and the angle is very acute, the most convex portion of the fundus being sometimes upon the same plane as the inferior extremity of the os tincae. We have never met these extreme degrees of flexion, except in women who have never had children. We think the cause of this may, perhaps, be that in consequence of numerous pregnancies and labors, the upper portion of the vagina loses its rigidity and elasticity. In fact, the more the walls of the vagina possess of resisting power, the better they fix the neck of the uterus in its normal position. Hence when by some cause the body of the uterus is turned over either forward or backward, the angle of flexion, however inconsiderable, must be very acute. If, on the contrary, the vaginal walls are relaxed and easily yield, the same cause which forces the fundus to bend forward will cause the neck, when not firmly fixed, to be thrown backward. Hence the acute flexion will combine with an anteversion of a more or less marked extent, and the angle of flexion will naturally be the more open. It will be the same in retroflexion."

Dr. Barnes places prominently among the causes which produce errors of location in the womb, mobility of the axis of suspension, so called by Aran, the author's precise words being:

*" Diseases of Women," Gardner's edition, p. 103.

"This axis is, however, susceptible to displacement *en masse*, owing to the flexibility of the constituent parts. We may define version as inclination or nutation of the uterus forward, or backward, or to either side, with regard to its normal axis, the uterus retaining its normal slight curve. The uterus, in version, rotates upon its axis of suspension, so that if the fundus dip forward and downward, the vaginal portion will rise in the opposite direction, and if, on the other hand, the fundus rise and incline backward, the vaginal portion will come forward."*

Prof. Schroeder,† after stating that Hildebrandt and Schultze attach great importance to the relaxation of the recto-uterine ligaments in the causation of retroflexion, asserts that this relaxation is often merely secondary.

Dr. Braxton Hicks, in a paper read before the Obstetrical Society of London, details the results of a series of very interesting experiments, made by injecting water, by means of a catheter, into the bladder and rectum of the cadaver, and noting the effect upon the position of the uterus, mainly as regards retroflexion.‡ By the distension of one or both of these organs, the experiments showed that moderate distension of the bladder produced more or less *retroversion;* and when distension was increased, especially in cases where the cervical attachment of the uterus was firm, *retroflexion* followed. In case of the rectum being full when the distension of the bladder was made, the uterus was raised in a straight position toward the brim of the pelvis, and when the vaginal part of the bladder was relaxed; the cervix was carried backward by means of increased mobility of the axis of suspension; the rectal pressure upon the uterus becoming the more potent factor in the causation of displacement; and the corpus uteri became, at first, somewhat anteverted, but ultimately raised out of the pelvis, in a nearly straight position; Dr. Hicks then states, and, as his meaning is somewhat obscure, I use his exact words: "If the uterus is at first retroverted and the vaginal portion of the bladder is first distended, the retroversion is restored." Of course all the conditions in these experiments did not accurately represent the conditions present in the living body; but these results were, nevertheless, as instructive as any similar investigations in regard to the uterus are likely to prove, in elucidating, among other things, the action of the vesico-utero-rectal connection, in the displacements of that organ.

Prof. Schroeder§ says that, contrary to what is generally held to be the case, the union of the bladder to the uterus is not always unyieldingly firm, and he states that the connective tissue composing this union

*"Diseases of Women," p. 579.

†Ziemssen's "Cyclopædia of the Practice of Medicine," vol. x, p. 318.

‡*Obstetrical Journal of Great Britain and Ireland*, vol. iv, p. 318.

§Ziemssen's "Cyclopædia of the Practice of Medicine," vol. x, p. 161.

may be put upon the stretch to that degree, that the corpus uteri finds room to flex itself anteriorly without resting upon the bladder, "and that, as the bladder distends, the uterus is pushed back bodily, retaining its abnormal shape:" Were this not the case, I cannot plainly see how an anteflexion beyond the first degree could be possible without sudden and forcible solution of continuity at this utero-cervical union. In fact, about thirty years ago some authorities held to the opinion that *anteflexion* was not a *pathological* state of the uterus, but simply a somewhat exaggerated condition of normal forward inclination of the corpus uteri, with which interference was not allowable; and as late as 1872 we find Schultze inclines to that opinion, but does not wholly adopt it, as he was said to do by Prof. Schroeder. But what he *does* consider, as does Prof. Schroeder himself, is, that a slight tendency forward, the angle of flexion being at the level of the os internum when the bladder is empty, is the position always taken by the healthy uterus, and that this natural curvature of the corpus uteri forward, bending somewhat at the os internum in *physiological antecurvature*, becomes, under the favoring morbid conditions, *pathological anteflexion.*

As relating, in part, to the condition of the axis of suspension of the uterus, it may be interesting to note that Hildebrandt and Schultze place great importance upon the condition of the recto-uterine ligaments, and consider that their contracted state generally causes anteversion, when this contraction remains persistent; the tissues at the anterior fornix of the vagina having their counterbalancing resistance at first weakened, and finally overcome.

The natural tendency to versions, and, in a minor degree, flexions of the womb, would probably be increased or diminished, by the natural or congenital position of the organ with reference to the pelvic antero-posterior diameter. That there is some variation in the position of the uterus, backward or forward, in this respect, is, I think, as likely as that there should be a difference in the situation of the introitus vaginæ, and a narrow or wide perineum dependent upon that peculiarity. A verification of this view exists, in the want of a perfect agreement among some of the standard authorities, in the description of the normal position of the uterus. Some, for example Barnes, speak of the womb as being balanced, not exactly at the middle of the pelvic axis alluded to, but a little nearer the symphysis pubis, while others, as Marion Sims, locate it nearer the sacrum. Anterior convexity, at the sacro-lumbar junction, and consequently an anterior obliquity of the pelvis, in a greater degree than common, would also be antagonistic to the posterior deviations of the uterine corpus.

In consequence of undue relaxation of the utero-vesical ligaments and adjacent connective tissue, in *anteversio uteri*, the lower posterior wall of the bladder, deprived of the support afforded by the normal relations between it and the uterus, and operated upon by the downward pressure of the corpus uteri above, often becomes prolapsed. This state of affairs does not occur in *retroversion.* In thirteen cases of anteversion reported by Dr. E. N. Chapman, in his work on "Diseases and Displacements of the Uterus," this vesical complication occurred in ten, and in four cases of anteflexions it existed in none. In reference to the work of Dr. Chapman's just alluded to, I desire here to affirm, that of all the literature of the subject with which I am acquainted, this work seems to me to be the one of the most practical value.

Great importance is given by writers on uterine pathology to a departure from the normal density and firmness of the uterine wall, as a chief factor in the production of flexions of the organ; the doctrines followed being chiefly those held by Rokitansky, on the one hand, and those of Virchow, on the other; the former maintaining that the tonicity of the uterus is kept up by a dense fibrous tissue, situated directly beneath the mucous lining of the organ, and which tissue constitutes the framework of the womb. Relaxation of this framework he considers to be owing to a catarrhal affection of the mucous membrane and the consequences following, causing finally atrophy of the connective tissue at the level of the os internum; or the presence of enlarged ovula Nabothi, giving rise to atrophy, and at last to giving away of the supporting stratum, leaving a rudimentary and flaccid tissue, incapable of supporting the organ.

Virchow, taking entirely opposite ground, denies the existence of this submucous stratum in the healthy uterus, and asserts that the organ is supported by its fibro-muscular wall, and that its rigidity is supplied by the fibrous portion of this wall. He considers wasting of this fibro-muscular tissue as the *result* and not the *cause* of flexions; he lays great stress also upon the normally fixed *cervix*, and attributes flexion forward to abnormal shortness of the round ligaments, and also to anterior fibrinous bands.

The weight of evidence at this time seems in favor of the views of Virchow, in regard to the pathological anatomy of the uterine walls; nevertheless, Rokitansky has some zealous followers, among them Klob; but late investigation has failed, thus far, to verify the existence of the dense fibrous submucous tissue, in the healthy uterus, described by this eminent authority.

Latero-versions and flexions, being regarded by the recognized author-

ities as usually congenital, rarely acquired, are classed as of minor importance to the other displacements of the uterus. Virchow attributes congenital latero-flexion to mal-development of one of the broad ligaments, and Klob states that congenital latero-version is often combined with *obliquity* of the uterus, while Rokitansky says the same thing, in effect, of latero-flexion. However produced, the same law governs their production as is operative in other flexions and versions, except that the primary factor in their creation consists in a lesion of one or other of the broad ligaments and *one* of the round ligaments. As in other deviations, in latero-flexions the bend is usually at the os internum, and in latero-versions abnormal mobility exists at the axis of suspension. The degree of lateral bending in these flexions is fortunately slight, as in the case of an acute angle at the site of the internal os, the extensive plexus of blood vessels at the sides of the uterus, at this level, would be more interfered with by pressure than by a like degree of bending either backward or forward.

It follows, then, from our present knowledge of the pathological anatomy of the uterus and appendages, that the view of Dr. Beattie and the others, in 1847, was sound, and that they stated the case of flexions and versions truly and in the simplest manner. The rule, in short, that, given a *relaxation* of the round ligaments, and there will result a displacement of *some* part of the uterus, if this relaxation remains persistent. In the case of weakness of the uterine wall being greater than the mobility of the axis of suspension, a retroflexion, and, *per contra*, a retroversion will result, the abnormal *shortening* of these ligaments leading to anteflexion or anteversion, under the proper conditions.

In treating of deviations of the uterus, I have hitherto not alluded to certain distortions of the vaginal portion of the cervix. These affections are usually congenital, or connected with congenital anteflexion in nulliparæ, and traumatic and inflammatory lesions in multiparæ. These cervical abnormalities were alluded to by Protherre Smith and Ferguson, in the *British Record*, June, 1848.

Dr. Skene,* in an able and very interesting contribution to the literature of the subject under consideration, entitled, "Deformity of the uterus, with special reference to anteflexion," has illustrated, by tracing the formation and growth of the uterus, commencing with its evolution from the primal filaments of Müller, how this evolution itself may become pathological.

Among other most interesting points in this article, one, particularly, I regard as of the highest importance. I refer to the invagination of

* *American Journal of Obstetrics*, vol. vii, p. 391.

the uterine cervix and formation of the fornices of the vagina; where the posterior vaginal wall becomes reflected much higher than the anterior, thus bringing the cervix abnormally forward, and where a tendency arises "to flex the uterus to a slight degree previous to its complete development," the pressure at the point of flexion arresting the growth of that part, the wall becoming still more attenuated, the flexion meanwhile being on the increase. "Excessive development of the cervix" also undoubtedly sometimes occurs, and it can readily be seen how it might eventuate in flexion forward, by elevation and inclination forward of the posterior vaginal wall. In this case, were the uterine walls evolved equally and synchronously with the cervix, according to the view I have taken, *anteversion* would ensue, in a greater or less degree, according to the mobility of the cervical attachment to its surroundings; but, as happens here, the uterine wall being thin, weak and partially developed, the action of the round ligaments, aided by the force of gravity, would inevitably produce *anteflexion*, the angle of flexion occurring at the union of the less with the more developed tissue—that is, at the level of the internal os.

All authorities unite in stating that *anteflexion* is much more prevalent at the inception of puberty and during the early period of uterine life than any other deviation, and all close observation tends to confirm this view.

As has been already seen, in flexions of the uterus, the angle of flexion usually occurs at the junction of the corpus and cervix uteri, and in some degree during active uterine life, and in a very marked degree at the advent of puberty; what might be called a line of demarkation exists between corpus and cervix, and this is the point where the true mucous membrane ends. At the commencement of puberty, the same causes being operative as before, in addition a sudden and great development takes place in the corpus, the cervix having previously become normally united, in the greatest number of cases, to its surroundings; the body, therefore, of the womb tends to incline toward the point of least resistance, and if the walls are in a normal state, a *physiological* condition gradually results, especially so, as usually the menstrual molimen is, for a longer or shorter period, intermitted. The uterus and appendages thus obtain time to properly adjust themselves. But if it should so happen that the uterine walls were defective from imperfect development, a flexion forward or backward, usually the former, would result from the traction of the round ligaments and the position of the uterus in the pelvis. It is obvious that at this period of uterine life and development, even if the uterus be turned neither forward nor backward, as Klob

asserts, a version would be very rare. And finally, from all this, I think it can be, without exaggeration, stated that the period of *commencing* womanhood is as momentous an event for good or evil as its virtual *close*, the turn of life, so called.

As appropriate to the point just alluded to, I present the abbreviated notes of a case possessing some unusual features.

October 27th, 1875. Miss L. H., ætatis eleven years and five months. Born and residing in this city.

Has menstruated twice, twenty-six days intervening. At a month previous to first menstrual flow, she became very nervous, with symptoms pointing to chorea. These nervous manifestations have continued up to the present time. Her mother naturally felt much concern at her daughter's early menstruation, and at the fact that her nervous symptoms did not pass off at the advent of the menstrual flow. She informed me that on an examination of the patient she had discovered what she supposed to be the neck of the womb, protruding from the vagina at each menstrual period, the protrusion receding after the cessation of the flow.

On superficial examination I found puberty to be well established as far as the genital organs were concerned, but in other respects the little patient did not materially differ in appearance from other children of her age. The right labium internum being hypertrophied, I directed the mother's attention to this enlargement, and I asked her if *this* was what she had observed as presenting during the menstrual period. She replied that she had taken note of this enlarged labium, and recognized the fact that *it* was *external*, whereas the protrusion to which she had alluded, she said, was "something that ought to be within the body." She described it as in shape "something like the tip of a glove-finger," partially inverted, and in color a deep crimson. Under the circumstances, I determined to examine digitally. The hymen was found attached posteriorly and in shape crescentic, presenting an opening sufficient in size to admit the introduction of the well-lubricated index finger. The cervix was found about an inch within the ostium vaginæ, os externum of natural size and transverse linear, the uterine neck thrown *forward* and the corpus carried *backward* and but *slightly bent*, producing, at the level of the os internum, a very obtuse angle.

The position of the womb was rectified as far as possible, and elevated; and as the whole organ seemed much congested, and in a state of decided hyperæsthesia, ammonium bromide and the ext. of belladonna, one drachm to the ounce, was applied, rubbed by the finger's point over the cervix and upper vaginal walls.

October 30th. Same treatment continued.

November 5th. Treatment continued.

November 19th. Menstruation has again taken place.

The mother states that the womb did not come down, and there was no unusual nervousness. Was kept quiet while the flow lasted. The treatment was continued and kept up November 22d, 26th, 29th, and December 2d.

Dec. 10th. Menstruation has again occurred. Uterus has kept up. No backward curvature, but cervix still points forward; in fact, we have now a retroversion in the second degree. No abnormal sensitiveness of uterus or vagina.

Treatment. The ammonium bromide discontinued. Tannic acid was applied to upper vagina, particularly to the posterior fornix. Application was made in the following manner: The extremity of the index finger was dipped in water, and then in tannin, which latter, dissolving and then drying, completely coated the extremity of the finger, which was then introduced into the vagina and applied to the parts described.

Dec. 17th. Uterine neck points very slightly forward. The fixation of cervix causes, again, a slight retrocurvature. Same treatment continued.

Dec. 24th. Symptoms same. Treatment continued.

Jan. 7th, 1876. Menstruation has just ceased. The general health has now become perfectly good. No nervous disturbance at the period, and no pain. It should have been stated that there has *never* been pain during menstruation, from its first appearance until now. She has gained in flesh and weight, and exhibits the usual external as well as internal signs of puberty well established.

Treatment continued.

Jan. 14th. Still slight bending of corpus uteri in a backward direction, but above the os internum and near the fundus.

Treatment suspended.

Jan. 12th, 1877. Examination reveals position of uterus perfectly normal. General health good. She presents the appearance and the development of a girl of sixteen.

The natural mobility of the uterus, and the elasticity of its ligaments, is well shown by its state of almost entire immunity from displacement by sudden and violent exciting causes. Where such displacement *does* occur, there exists, almost always, a predisposing cause, presumedly the same as would have in the course of time produced the same deviation. For example: fibroids in or upon the uterine walls, parietal softening, relaxation of ligaments and surrounding connections, sub-involution and the like.

The external and internal muscular coats of the uterus are considered by Rouget to be organs of erection, and he judges these coats to be in a state of normal erection during menstruation ; he affirms also that the fibres of the external coat are prolonged into the ligaments and also into the oviducts and ovaries.

Dr. E. N. Chapman considers the erectile organs of the uterus and appendages to be physiologically excited in menstruation, the erotic state, and during utero-gestation ; and this natural erectile congestion, prolonged beyond the physiological limit, he classes as not only abnormal, but as leading to a pathological condition of the uterus ; and Dr. Peaslee has lately adopted substantially the same view. Dr. Chapman* states that (adopting his own words): "The substratum, the remote causation, the germ of uterine disease, is perversion of function. The results of this perversion, physiological laws broken and thrown into disorder, are the only morbid conditions found in any case ; in other words, the pathology is comprised in the confusion and aberration of normal operations." The author then proceeds to speak of a physiological function being converted into "a congestion, pathological and continuous." This, in my humble opinion, is sound doctrine. The morbid uterine condition described will eventually, in very many cases, lead to versions or flexions, whether resulting from causes menstrual, erotic, or those connected with sub-involution after parturition, *version* or *flexion*, according to the state of the ligaments, the cervical surroundings, or the condition of the uterine wall.

Those cases of flexion or version of the womb arising from traumatic lesions, or the results of inflammatory exudations, time will not permit me to consider in this paper.

We often find uterine displacement persisting after the menopause, and according to the authority of the most reliable observers developing often at that period, though absent before. This is to be attributed to fatty degeneration of the uterus and appendages, and is to be regarded of no practical importance.

The diagnosis of these affections is so easily made, by the aid of the uterine sound, the flexible probe, and bimanual manipulation, as to scarcely require notice.

Alluding to the uterine sound, I find that Prof. Simpson advised bimanual exploration, in the diagnosis of uterine versions and flexions, as long ago as 1848, as will be seen by referring to a communication of his to the Dublin *Quarterly Magazine* for May of that year.

Dr. Noeggerath, of New York, in his "Contributions to Midwifery,"

*"Diseases and Displacements of the Uterus," p. 408.

recommends examinations for diagnostic purposes to be made with the patient in a standing position. This is also proposed by Dr. Chapman. In most cases I make use of this position, but unlike the authorities alluded to, I prefer to have the patient face from me; I thus have the whole upper vagina within easy reach of the exploring finger, and by causing the patient to separate the lower limbs moderately, and to incline the body forward, the hands resting upon the back of a chair, or some other suitable object, I am enabled, without much difficulty, to practice bimanual examination.

All things considered, utero-gestation seems the most natural means for removing flexions and versions previously existent in the womb; and where prompt involution follows parturition, it generally proves successful; but unfortunately, a great drawback to its employment exists in the fact that so many of the sufferers from these uterine displacements are *sterile.*

Theoretically there can be no substitute for inter-uterine stem pessaries in the treatment of flexions, and the temptation to resort to them will probably always exist. Undoubtedly brilliant results sometimes follow their use in a few cases, where the pure displacement is the chief pathological element to be combatted; but to render their employment in the greatest number of cases successful, it would be imperatively necessary to *devitalize* the uterus. The testimony of gynæcologists of so much experience as Dr. Emmet and others will be, for a time, probably, a standing protest against their indiscriminate employment. But nevertheless, this form of pessary will always have its advocates; and in those who continuously resort to its use, this advocacy will be stronger at thirty years of age than at three-score.

But pessaries of some kind are indispensable (and the stock to choose from is certainly large), and this is all but universally acknowledged by all practitioners who treat uterine deviations; but their successful employment is not an easy matter, without experience. In their use we must be apprentices before we can be masters. Dr. Thomas compares the skill acquired in introducing a pessary to that necessary in fitting a shoe; but as pessaries and their proper adjustment are not the *sole* means used in the treatment of uterine displacements, it would, perhaps, be well not to apply the maxim, "*Ne sutor ultra crepidam,*" as its application might eventuate in the dogma, "*Nothing like leather.*"

All things considered, the wearing of a pessary should not only be painless, but it should afford decided relief; but this we must not, in all cases, expect immediately on its introduction. I have frequently found benefit to follow wrapping a pessary, a size or more too small, with

cotton wool previously carbolized. A pessary so prepared may often be worn, when by its investment of cotton it becomes much larger, when introduced, than the plain instrument of proper size, thus giving better support with less pressure.

It is well, in the employment of pessaries in private practice, to carefully guard against a class of hystero-hypochondriacal patients, who seem to spend the greater part of their lives in dwelling on their sexual ills; their imaginations become very active, and certain pathological theories seem to be periodically held by them. *Ulceration*, which in their imaginations, at one time, seemed to be the prevailing uterine malady, has now gone out of date with this class of patients; and "*tipping of the womb*," as they generally style it, is the present prevailing complaint. Nothing short of wearing a pessary will satisfy these females.

Another class of our clientage, looking upon dislocations of the womb in the light of *joint* dislocations, will uncomplainingly endure more suffering than is necessary, in the wearing of a pessary, thinking pain to be an unavoidable accompaniment of the reduction of such displacements.

I have, in my own experience, found pessaries more useful and reliable in flexions than in versions—that is, if the object in view be the entire and radical removal of the displacement. In versions, the patient will often express a feeling of decided relief from the introduction and wearing of a pessary; but, upon examination, we are apt to find that the instrument has slipped from the position in which it was originally placed, but still giving comfort to the wearer by furnishing *support somewhere*. I give a recent case in illustration. On the 4th of December, 1876, Miss N. C. B., æt. 26, presented herself for treatment. Two years ago she suffered from retroversion, and was treated by one of the most eminent gynæcologists in the country. She remained under treatment one year, during the greater part of which time she wore a retroversion pessary. At the end of the year she returned to her home with the backward displacement entirely removed. Last summer, having a slight return of her old difficulty, as she supposed, she re-introduced the pessary she had previously worn, and she was wearing it when I first saw her. The instrument she was using proved to be a Grailly Hewitt retroversion lever pessary. On removal of the instrument, I found complete *anteversion* in the second degree. The anterior fornix of the vagina was put immensely on the stretch, and was highly sensitive, as was the uterus also. Still, as was proved by the relief furnished by the wearing of the pessary, when mobility of the axis of suspension was prevented and the womb became fixed, although the abnormal position of the uterus was pushed to its fullest extent, thereby she experienced such relief as to be enabled to go about her usual duties with comfort.

In removing the pessary, its further use was forbidden. The ammonii bromide was applied in the usual manner, three times a week, then twice, and this was kept up until February; the uterus being at the same time supported by an improvised cotton pessary (round), dipped in water, the inside filled with tannic acid and the sides being brought together. It was then pushed well up to the anterior fornix of the vagina.

This method of using astringents is a slight modification of the mode of Dr. E. L. Duer, of Philadelphia. Dr. Duer lately proposed this method, but I find it previously recommended by Dr. Tilt, of London, in the *Lancet* for August, 1856. The patient returned to her home on the 24th of March. She is to continue the use of the cotton and tannic acid as long as may be necessary.

The local treatment prescribed in this case exhibits the main features of the plan I usually pursue in versions, when not using the hard rubber or metal pessaries. In some cases I find the cotton pessary of Dr. Page, or its modification by Dr. Trask, to be very useful; of the two, I prefer the simple cotton contrivance of Dr. Page, although it is necessary to use a new one at each introduction. In other cases, to cause contraction of the upper portion of the vagina, I employ a small ovoid piece of hard wood about the size of a pigeon's egg. This I coat by dipping it in a thick solution of tannic acid in water; I then dry it.

One of these can be easily introduced at night by the patient herself, after a little instruction, and by attaching a string it is removed without trouble. Another method, in some cases superior to any yet mentioned, for producing and keeping up contraction of the upper vagina, is that of Dr. Goodell, of Philadelphia—namely, *insufflation*. The doctor recommended the powder to be applied by means of the household instrument for the use of insect powder; but a great improvement, I think, consists in the employment of *Clay's Insufflator*. For the relief of hyperæsthesia of the cervix and surroundings, in addition to the bromides, iodine and tannic acid, combined in various proportions, are beneficial. I often, for this purpose, make use of potass. iodid., 1 drachm; tannic acid, 2 drachms, or more, to ext. belladonnæ, 1 ounce. This I apply in the same manner as the bromides already mentioned.

Dr. Bartholow, in his recent work on "Therapeutics and Materia Medica,"* recommends iodoform and tannin, 1 drachm to the ounce, in dry powder, to be packed around the cervix. This, I imagine, would be one of the best of remedial combinations; but I have abstained from its use on account of the vile odor of the iodoform, not only to the patient herself, but to all associated with her.

* Bartholow. "Materia Medica and Therapeutics," p. 173.

As to external abdominal support, in all forms of uterine displacement, I find that the corpulent are more likely to be relieved than those somewhat emaciated patients presenting externally concave abdominal walls, as was observed some time ago by Dr. J. C. Nott.

In the treatment of flexions and versions of the womb, we find the remedial means at command almost superabundant, but, of course, some degree of experience is required, and good judgment is called for in making our selection; still, the laws governing are in no wise different from those binding us in general practice, so called, and the most important of them all is to make a separate study of each case.

Of the purely surgical means proposed for the relief of flexions and versions I have had so little experience, that I prefer to say nothing, as in this regard I am only a disciple.

I beg to be permitted, before concluding, to again apologize for introducing for your consideration a subject so trite and worn as that which forms the tenor of this paper; and at the same time to hope that its presentation may be the means of eliciting some of the experience of those in the body of the general profession in this Society who may have been called, from time to time, to treat these uterine deviations, and who may have, perhaps, formed opinions without entire reference to the recognized authorities. "*Non addicti in verba jurare magistri.*"

In illustration, *by antithesis*, of the judgment held concerning evidence of such a nature in our sister profession, the law, I quote from a recognized authority:* "Perhaps the testimony which least deserves credit is that of skilled witnesses"; the author then proceeds to say that these witnesses are expected to give, and for the most part *do* give utterance to their *opinions*. "They do not willfully misrepresent what they think; but their judgment becomes so warped by regarding the subject in one point of view, that, even when conscientiously disposed, they are incapable of expressing a candid opinion. Their belief becomes synonymous with faith as defined by the apostle, and it too often is but the substance of things hoped for, the evidence of things not seen."

* "Taylor on Evidence," vol. i, p. 73.

BELLADONNA POISONING.

(CAR-STABLE CASES.)

BY J. B. LEARY, M.D.

On March 14th, 1877, I had the pleasure of seeing, in company with Dr. F. W. Bowron, one of the latest and perhaps most important addition to toxicology—namely, the recent case of poisoning of James Fitzpatrick, of 401 Lexington Avenue, by belladonna. The why and wherefore of his taking the poison is best told in his own words. He states, he is twenty-eight years of age, born in Ireland, married, and by occupation a hostler. He was at that time an employé of the Green and Gates Avenue Railroad Company, his duty being the care of those horses suffering with cerebro-spinal meningitis, and to whom he administered boluses of belladonna, containing from 60 to 120 grains of the English extract, under direction of the veterinary surgeon. Some of the other employés were in the habit of chaffing him with regard to the pills, and dared him to take one, telling him they contained nothing but licorice; and he, not knowing, as he now states, the dangerous character of the drug, determined to take a portion of one. He divided one in half, held it in his hand for some time, while he continued to administer other boluses to the horses. He rubbed it on his tongue, and, as it did not taste badly, he, as he says, "threw it over," meaning he swallowed it. He thought no more of it (this was about 4 P. M.), and attended eight other horses without feeling any effect of the drug. "It took him at least ten minutes to attend each horse," when, as he was about to cross the street, where some other sick horses were kept, he found his limbs weak and his head pained him. Then followed the other symptoms in rapid succession—as, dryness of the throat, tightness of chest, dimness of vision, etc. He made several attempts to vomit, but failed in doing it. He staggered home and sent for all the doctors in the neighborhood.

When we saw him—7 P. M.—he was delirious, the united strength of four men being insufficient to hold him. His pulse was 120, pupils widely dilated, respiration 15. It was then three hours since he had taken the poison, and we decided that emetics were of no use, as the poison was by this time completely absorbed. At 7.30 P. M. we gave him 30 minims of Magendie's solution, without any perceptible effect. Just before giving it he became comatose. Pulse the same and compressible, tongue thick and swollen, cannot swallow. 8 P. M.—Pulse

110 and full; pupil stationary; respirations regular but stertorous; is becoming more comatose; venous congestion well marked all over the body.

8.30.—Coma becomes profound; otherwise condition is the same. 9 P. M.—30 minims of Magendie were given; coma still profound; reflex irritability lost; no sense to any external impression. 9½ P. M.—10 minims Magendie, without any effect; condition still the same. 10.20 P. M.—20 minims Magendie were given, when the pupil contracted about one line. Respirations, 9 per minute; pulse, 110; coma still profound. 11.20 P. M.—30 minims more of Magendie. All the morphia given thus far was given hypodermically. Respirations had now fallen to 6½ per minute; pulse still 110. He was left for the night in charge of my student, Mr. H. C. Rogers, who was told to note any change in his condition, and call us if necessary. It is needless to say we left the patient with a very unfavorable prognosis. He had now been given 120 minims of Magendie, equal to four grains of the salt, hypodermically, without any marked physiological effect, the pupil being still dilated. He had become profoundly comatose before he had received any medication, and it was impossible to make any impression on him by pulling his hair, slapping him, pinching him, sticking pins in the plantar fascia, or any means we could think of.

At 6 A. M., March 15th, fourteen hours after taking the poison, he awoke and conversed with his wife about what he had done, and called for his pipe, which, however, was not given to him. Dr. Bowron and I saw him at 8.30 A. M.; he still remained rational; told us how much of the poison he had taken, etc., but was continually dropping off to sleep. Could be roused by talking to him. Decided to give him an enema of—ol. ricini, 2 ounces; ol. tereberinthinæ, 2 ounces; ol. crotonis, 3 gtts. Also gave a bottle of magnesia cit. by the stomach. He experienced some difficulty in swallowing; his tongue was thick, his lips swollen, and he complained of a burning sensation from the pharynx to the stomach. 10 A. M.—Has had no movement; is still semi-comatose; pulse, 109; temperature, 101⅞; respirations, 9; pupils 1 line smaller, and respond slightly to light; characteristic eruption well marked; subsultus tendinum to a marked degree; slight reflex irritability. Gave enema of soap-suds and ol. ricini without effect; gave 5 minims Magendie hypodermic; drew off about 5 pints of urine per catheter, which, when first drawn, had a dark amber hue, and as the last 8 or 10 ounces were drawn the color was lost, which seemed to show that a certain portion was dammed back in the ureters, and possibly in the pelvis of the kidney. This was done with considerable relief

to patient. Some slight difficulty was experienced in passing catheter, owing to constriction of neck, due to over-distension.

12½ M.—Condition still the same; still wants to sleep. Having had no movement, repeated enema of ol. ricini, etc. 2 P. M.—Condition still the same; has had no movement. Temperature, 101; pulse, 112; and compressible respirations, 8 per minute; subsultus tendinum still marked. Presents the appearance of rubeola on the second day, with some vesicles about the nose and mouth, similar to variola.

2.45 P. M.—Temperature, 101⅞, with profuse diaphoresis. 3 P. M. —Pulse, 112; respirations, 9. Has had no movement; determined to apply galvanism over the bowels, which was done, without effect. On applying to muscles, they respond quickly and well. We ordered three pills, containing pulv. elaterii (Clutterbuck), ½ grain; pil. colocynth co., 9 grains; one pill every three hours. At 4 P. M. repeated enema of ol. ricini, etc.

5 P. M.—Temperature, 102; pulse, 104; respirations, 10. Subsultus tendinum still marked. Says he feels easier and better. Talks thickly; complains of dryness of fauces; tongue considerably coated; pain in throat and along œsophagus to stomach; also constriction about the chest.

11 P. M.—Temperature, 100; pulse, 58; respirations, 12. Gave enema soap-suds, etc.; slept naturally until 11.45 P. M., when he awoke and had a pronounced chill; after chill, pulse, 68; respirations, 11; temperature not taken. He then dropped off to sleep again. At quarter to 6 A. M., March 16th, had movements from bowels, the first of which was scanty, two ounces, and gave an odor of belladonna. At 6.30 A. M., March 16th, pulse, 56; respirations, 14; pupils still dilated. Sat up in bed previous to our seeing him and smoked a pipe, which he said made him feel better. Saw him again at 9 A. M., when his pulse had increased to 74; respirations diminished to 10; considerable dryness of fauces; tongue coated and swollen; venous congestion well marked; also eruption. We gave tr. cinch. co., 3 ounces; tr. nucis vomicæ, 2 drachms; Sig., 1 drachm every 4 hours. Patient up to this time was fed on beef tea and oatmeal gruel, mucilaginous drinks.

12 M.—Pulse 54; respirations, 16; pupils normal. Complains of a terrible itching, there being considerable venous congestion. We added ammon. carb. to cinchona mixture, which diminished congestion. Patient is less inclined to sleep and is more rational than at any time since taking the poison. Has had a very free movement of the bowels.

3 P. M.—Pulse, 50; temperature, 100; respirations normal. Had another movement at 1 P. M.

7 P. M.—Pulse 54. Complains of weakness due to profuse diaphoresis.

10 P. M.—Pulse, 59; temperature, 100; respirations, 9; pupils moderately dilated; skin moist.

March 17th, 8.30 A. M.—Pulse 50 and weak; temperature normal; respirations normal; pupils slightly dilated. Has slept well during night. Subsultus almost subsided. Soft boiled eggs and milk punch were added to his diet. Patient says he feels perfectly well and wants to go out.

12 M.—Respirations normal; pulse, 47.

March 18th, 19th, 20th.—Pulse kept down to 45, and could not be increased. On Wednesday, March 21st, one week after taking poison, was discharged cured, as no trace of the poison was evident. The following Monday, 26th, resumed his labor, and has continued to work up to this writing.

Now here is a man who takes thirty grains of the pure extract of belladonna at four o'clock, and wakes up the next morning as though he had only had a sound sleep. Why is this? Here is a poison the dose of which is put down in all text-books at 1/8 to 1/4 grain, and caution given to increase the dose but slightly, and we are told to watch the effect of the drug carefully for fear of killing our patient; it is classed as an active narcotic poison, second only to morphia. Can it be that the poisonous qualities of the drug have been exaggerated, or is it one of those poisons of which the stomach will absorb just so much and the rest remains inert—or what? And now let us take the what. In all that I have read in looking up this subject, I can find but very few deaths as occurring directly from its use. The only one I find is in Trousseau, where he speaks of a battalion of soldiers, after a long march, tired, hungry and exhausted, eating some of the berries which they find close to their camp, thinking it some kind of fruit, and a few only of them die. Again, cases are cited where the application of a belladonna plaster applied to a nervous woman has produced all the well-marked symptoms of poisoning; but still the patient recovered, though the pulse fell in this case to 25 per minute. Dr. Gray, *N. Y. Journal of Medicine*, vol. v, p. 184, says that after taking an overdose he passed three pints of urine in one hour, and here we had retention, with slight symptoms of uræmia. Again, belladonna is supposed to relax involuntary muscular fibre, and here we had just the opposite condition. Dr. Gray fails to mention what he calls an overdose, but we must presume it to have been 2 or 3 grains;

and this patient took 30 grains. Can we not ask with reason, then, if belladonna is really a poison, or is it not? As for myself, I am unable to say. During the past week I had occasion to prescribe the tincture in 8 drop doses for incontinence, and was surprised to find symptoms of poisoning; the patients were upwards of 60 years of age. Then why did this man not die and keep our books straight, or was it because we gave him so much Magendie? Though that did not seem to have any effect, the *rationale* of his recovery I leave for the members to solve.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The May meeting will be held on the 15th, at which there will be presented the following papers:

On the treatment of Chronic Pulmonary Affections, by Dr. H. F. Williams.

Concerning Variola, Vaccinia; with remarks on the microscopy of Vaccine Lymph, by Dr. W. E. Griffiths.

Lime-water and Milk as a Dietetic Agent, by Dr. E. N. Chapman.

The Lactometer, by Dr. J. H. Raymond.

ITEMS.

——Rötheln.—At the March Meeting of the Society, Dr. S. Sherwell called attention to the epidemic of Rötheln, then in Brooklyn. Before he recognized the nature of the epidemic it had been called Roseola, etc., etc. The epidemic in New York commenced in December, 1873, and lasted till May, 1874. It had its inception in Brooklyn in December, 1876, and is about dying out now.

——Dr. Wm. Aymar Kissam died at the early age of 32 years, on the 12th of April, and was buried from the beautiful country seat of his father, Dr. D. E. Kissam, at Huntington, L. I., on the 15th, after a prolonged and wasting illness by phthisis. He graduated only ten years ago from the College of Physicians and Surgeons. He was one of a long lineage eminent in this part of New York for their devotion to our profession—in fact, the very first degree in medicine ever given in this province was that to Samuel Kissam, M.D., in 1767; whose nephew, Richard S., adorned the profession of New York city in the early part of this century, as a hospital surgeon and lithotomist—one of those fine characters of the olden time whom Dr. Francis has delighted to honor.

——Dr. Francis W. Bird died April 15th, in his forty-third year, after a brief illness. He was a graduate of the Queen's University, of Canada, in 1859, came to this city in 1865, joined the Society of the County in the following year, and was well known as a physician of genial and sympathetic character. He has been engaged in the work of the Southern Dispensary, as well as in that of the Health Board.

——Dr. N. Gerhard Hutchison died April 10th, in his 24th year, a victim to diphtheria, contracted in the pursuit of his calling. He had been attending several cases of that disease, and about one week before his death performed tracheotomy for the relief of one of them. Soon after he was himself attacked, the disease running a rapid and most painful course. He was the third in a direct line of physicians, the only son of Dr. J. C. Hutchison. His untimely demise falls with grievous weight upon his parents and family. He was a graduate of the College of Physicians and Surgeons in 1875, held the assistant-surgeoncy of the Twenty-third Regiment, and had been connected with St. Peter's Hospital and Orthopœdic Infirmary.

——Dr. George Fred. Ayling died April 6th, at his late home on Bedford Avenue, near Myrtle. He began his profession under a license of the Apothecaries' Hall, London, in 1857. After coming to this city, he, in 1864, received from the L. I. C. H. a doctor's degree. His field of practice was largely in the Seventh Ward, where he was very well known, and held in high esteem by a large circle of patients.

——The Law makes no difference between the different schools of medicine. To call a person, lawfully practicing as a physician, a "quack," is, in effect, charging him with a want of the necessary knowledge and training to practice the system of medicine which he undertakes to practice. It has been held that the professional services of a medical clairvoyant are medical services within the statutes.—*McClelland on Surgical Jurisprudence.*

——The Inebriates' Home, Fort Hamilton, N. Y.—The Annual Report of this excellent institution has been received. It shows only one death in this year out of 244 patients (190 male and 54 female). They have never had a suicidal death in the Home, though ten years in operation, and with 1,000 patients. They claim that it is the best constructed and managed institution of the kind in existence, and the only one where the restraint of the inebriate, while under treatment, is practically carried out. They also claim strict discipline, the seclusion of the dissolute and reckless, and the prompt expulsion of the unruly. Their treatment of temporary insanity, superinduced by prolonged inebriety, has been successful in every case. These patients are never left alone. One or more nurses are in attendance on each patient, day and night, and the patients, in fine weather, are kept out on the park grounds of the institution. This experience at the Home has been brought about from two weeks to two months.

——The Pharmacopœia.—Dr. J. C. Peters, President of the New York County Society, honored this Society with a visit at our last meeting. He addressed the members briefly in reference to the imperative necessity of a Pharmacopœial reform. The time has come, in his opinion, when this important department of medical art shall revert to the profession which originated it and formerly controlled it, and to whom *it still rightfully belongs*—but whose authority and control has been virtually usurped of late years. The profession at large is thoroughly dissatisfied with the recent mismanagement of the revisions; and in order to secure a good and standard authority the County and State organizations of the profession must engage in the work of bringing about a change, by the assertion of their rights. These rights they appear to have forgotten until recently reminded of them by Kings County. The remarks of Dr. Peters were received with applause by the meeting—attended by over one hundred members.

——Wyckoff.—Dr. R. M. Wyckoff contributed (in part) the article on Medical Schools to the Cyclopædia of Education, just issued from the press of E. Steiger, New York.

——Pilcher.—The Society voted, at its last meeting, a vote of thanks to Dr. L. S. Pilcher, for his very elaborate and pains-taking investigations into the history of Croup and Tracheotomy in the city of Brooklyn.

——Sick Headache.—This troublesome affection has recently been treated with a certain degree of success by the citrate of caffeine, especially in the form of the "granular effervescent" salt, which is now produced in this country. A heaping teaspoonful, containing one grain of the citrate, is the dose to begin with, and may be repeated every hour or two.

——New Journals.—The first number of the *Hospital Gazette*, of New York, has appeared in very creditable shape, issued by the same publishers who issue the *Archives of Surgery*. Dr. F. A. Lyons is the editor. It is a monthly of sixteen pages, with clear type, on large paper, at one dollar a year.

The strangest venture that has recently been made in a journalistic way is from a Western city; it calls itself a "health journal," but one of its chief objects appears to be an assault upon vaccination.

——The Quinine Tariff.—The customs tax on quinia, it is claimed, is grievously heavy on the Western States, and new districts generally, where malaria prevails. In this view, the Kentucky Medical Society, at its meeting in April, set in motion a project looking to the discontinuance of this tax. It is stated, with much cogency, that the new districts, where the population is especially engaged in opening up the country's resources of wealth and production, should not be burdened with a tax on that which is almost as necessary as the "staff of life" itself.

——Hydrophobia.—A case of this disease recently occurred in this city in a singular manner. A gentleman found at his door-step a sick cur, and, taking pity on it, was about to raise it up in order to care for it, without reflecting whether the animal was rabid or not. The dog turned and bit him, inflicting a slight wound, but one which eventually resulted in distressing death.

——Salicylic Acid in Diphtheria.—The best method of applying this remedy topically is by blowing it over the affected spot by means of a quill or tube. The membrane, it is claimed by Dr. Boettger, in *Allgem. Med. Cent-Zeit.*, is in this way removed in an extraordinarily short time. While the acid is being blown in, the patient should, if possible, hold his breath. But even where this cannot be done, as in the case of young children, the only disagreeable effects likely to be produced are coughing and sneezing, which need not prevent the employment of this valuable plan of treatment.

——American Surgery.—Mr. William Adams, an honored delegate to the Centennial Congress, on his return home took the chair as President of the Medical Society of London, and read an inaugural address in which he reported his American experiences. He considers the American surgeons to be good anatomists and dexterous operators, and remarkably ready in mechanical skill and inventive ingenuity, specifying the credit due to Buck and Davis, of New York, for the introduc-

tion of weight-extension. He agrees with the opinion of Mr. Erichsen that American surgery is essentially the same as that of England, as taught by Cooper, Bell, Brodie and Fergusson. Mr. Adams' tribute to American surgery was received with cordial applause. . . . . This off-hand estimate of Mr. Erichsen, destined to much iteration on the other side of the sea, while it is extremely complimentary, will scarcely be accepted here as a full statement of the case, any more than if some French guest should return home and say that he had found here the surgery of Desault, Boyer, Velpeau and Dupuytren. American surgery owes much to all the schools, for it has for a century occupied neutral ground, and has accepted impartially the good in all, while servilely following none of them. At the same time it easily took an independent tone and color of its own, as may be seen from Prof. Gross' historical sketch and others put forth recently. A most instructive paragraph occurs in the preface to Dorsey's Surgery in 1813: "An American, although he must labor under many disadvantages in the production of an elementary treatise, is, in one respect, better qualified for it than a European surgeon. He is, at least he ought to be, strictly impartial, and therefore adopts from all nations their respective improvements. Great Britain and France have been foremost in the cultivation of modern surgery, but their deficiency in philosophical courtesy and candor has, in some instances, retarded its progress. The doctrine of adhesion, so ably developed in England, has been shamefully neglected in France; and French surgery in fractures finds no advocates in England. Some of the best writings of Desault have never been translated into English, and those of Hunter are unknown or disregarded throughout the continent of Europe. This spirit of hostile rivalship, extending from the field of battle to that of science, cannot fail to exert a pernicious influence, a truth too palpable to escape the notice of any foreigner who visits European hospitals. An American, in walking their wards, sees with surprise in London a fractured thigh rudely bound in bundles of straw, and the patient discharged limping with a crooked limb. In the French capital he witnesses an amputation, and is disgusted with the officious zeal with which the surgeon crams a handful of lint under the flap, with the express design of preventing adhesion. It is difficult to reconcile these facts with one equally true, that among the most distinguished men who have ever adorned the profession of surgery are living characters in London and Paris."

——Treasurer's Office.—Dr. Hopkins has removed to 375 Grand Ave., between Fulton and Gates Avenues.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, MAY 17, 1877.

LIME-WATER AND MILK AS FOOD AND MEDICINE, IN CERTAIN DISEASES PECULIAR TO THE CHILD-BEARING FEMALE.

BY E. N. CHAPMAN, M.D.

The importance of diet, either in health or disease, can scarcely be overestimated. In the sick-room, the use of broths, extracts of beef, tea and toast, and the many farinaceous preparations that, until the last four or five years, held undisputed sway, has now given place, more or less, to that composed largely or wholly of milk. This change was due mainly to the fact that milk contains all the elements of nutrition in the exact proportions needed by the several tissues of the body; but other articles separate principles only—the proteinaceous, the amylaceous, the oleaginous, the saline, etc.—that might or might not be so adjusted as to supply the demands of nature. A deficiency or a disproportion in the animal, vegetable and mineral constituents of one's food seriously impairs digestion, impoverishes the blood and perverts assimilation—matters of no light import, when the welfare of the patient depends upon the integrity of the nutritive functions.

To plain milk, which is gradually supplanting everything else in the dietary of infants, and even those of riper years, there exists the serious objection that it is, from the large, solid curds formed in the stomach by

the action of the gastric juice, quite indigestible, a condition of things the same as when pieces of meat are swallowed entire. As these masses of curd are to be liquefied from circumference to centre by a slow, laborious process of disintegration, such a diet can but be more faulty than the old, with all its short-comings. In health it oppresses the stomach, excites dyspeptic symptoms, and occasions, oftentimes, a smart febrile attack. How, then, can its steady and exclusive use, if thus prejudicial to the well, be salutary to the sick, whose gastro-intestinal secretions are disturbed and vital forces depressed? For one, I am fully convinced that plain cow's milk is unfit to be the main article of diet in any case, whether that of children or adults, and especially when the character of the solvents of the food is much impaired by disease.

To remedy these objections to plain milk, the addition of an alkali has been advised, particularly in the case of infants. Lime, potash, soda or ammonia is selected indifferently, as the action of each is thought to be the same—the removal of acidity and the promotion of digestion. Now, an ounce and a half of lime-water, containing less than a grain of the alkali, will, when added to a glass of milk, obviate its bad qualities, and render it the most friendly substance that can be given, even to those who never drink it plain without a sense of uneasiness and weight at the epigastrium, and that, too, though employed as the sole diet in typhoid cases.

Will potash, soda or ammonia in grain doses produce the like effect?

Having the last four years fed babies to the completion of the first dentition on lime-water and milk, the earlier months exclusively, and the later with the addition of farinaceous preparations only, I have attained certain striking results—results to which hitherto I had been a stranger. It is surprising how vigorous is the digestion, how compact the frame, how hard the flesh, how clear the skin, how bright the face, and how rich the blood; and besides, how rare are common ailments, and how prompt the reaction against grave diseases. In physique they are not unlike the uncared-for little brats one may see, dirty, ragged, unkempt, playing by the roadside in remote country places, where modern progress has not stamped the life-blood out of the coming generation.

Will potash, soda or ammonia, given one, two or three years uninterruptedly, be thus conducive to health?

Lime develops remarkable nutritive qualities in milk, by virtue, not of its alkalinity, but of an undetermined chemical property, which has the singular effect to render the milk acceptable to the stomach, easy of digestion and ready for assimilation. Thus the phosphate of lime, the prime factor in tissue changes, is in the ratio of 2.31 to 1,000 parts of milk presented to the blood and distributed to the growing cells. That

cow's milk has highly nutritive properties is demonstrated practically on a large scale by the rapid growth of calves the first few weeks after birth. Here the milk and the stomach are exactly adapted, not by art, but by nature, the one to the other.

Lime has a peculiar action on oil and on milk, as is shown by very simple experiments. An ounce of lime-water, representing less than a half grain of lime, and an ounce of olive or linseed oil, when shaken together, become a thick, honey-like mass that does not change by keeping; but an equivalent proportion of the other alkalies dissolved in water and mixed with the oil, form a thin, yellowish fluid that soon separates into its original constituents. In the first experiment there is formed a permanent emulsion, but in the second a temporary admixture only. There is, as I claim, a like reaction between the lime and the oil globules of the milk, that intensifies the emulsion already existing, and renders the normal but weak bond of union closer and more intimate.

Four grains of pepsin will precipitate the casein of an ounce of plain milk almost immediately, but if lime-water be first added, not for three or four hours. The first experiment yields dense, adherent masses; but the second, fleecy, broken curds, that are so soft and fine as on agitation to blend again with the whey, and restore the original white, opaque color. The emulsion formed by the reaction between the cream and lime is not disturbed by citric or hydrochloric acid, nor is a black precipitate thrown down by calomel.

My inference, therefore, from observation and experiment, is, that milk, by the addition of lime, is enabled to resist the prompt action of the gastric juice; that the precipitate formed eventually is fine and flocculent, and consequently is easily digested; that all the constituents of the milk, properly elaborated, are presented to the lacteals for absorption; that the blood receives each element of nutrition in the proportion required for perfect assimilation; that the hydrochloric acid of the gastric juice, an agent in the solution of protein compounds second to pepsin alone, does not affect the emulsion; that the casein is beyond the reach of the vegetable acids; that the affinity of calomel and other chemicals for lime is less than that of cream, whereby the special effect of medicine is not impaired; and, finally, that lime in the proportion of a grain or less to eight ounces of milk renders it a perfect food—one answering all the demands of the digestive organs, and all the requirements of the nutritive functions.

Not only does milk represent all other foods, but certain medicines as well—cod-liver oil, the phosphates, the salts of iron, the vegetable acids, etc., etc.—which are in common use by physicians to remedy

the defects of an ordinary diet. Here is a natural product, within the reach of all, which offers the oil, the phosphorus, the lime, the iron, and every other principle necessary to normal nutrition, in a state of chemical combination far better adapted to the wants of the system than in the rude substitutes of the materia medica.

At an early period of infancy, condensed milk is preferable to plain, inasmuch as the more intimate union of its constituents by heat aids the lime in preserving the division of the casein. So also at a later age, and even at any period of life, there may be the same reasons to influence the choice when the gastro-intestinal secretions are excessive and very acrid.

As, however, its mawkish taste when diluted with water forbids its general direction to those old enough to insist on their likes and dislikes, it is desirable to have a preparation of similar qualities. Such a one can be readily improvised by first making a gruel of farina or ground barley with water, and then adding five or six parts of milk a few minutes before the skillet is removed from the fire. This gruel should, from the labor thrown on a weak stomach by starchy compounds, be very thin, only just enough in substance to form a thickened mixture with the milk.

The sickness of pregnancy has not, in my experience, been much controlled by a milk diet, even though the proportion of lime-water was largely increased. It has been an acceptable food, more so than any other, but has rarely exercised much influence over the nausea and vomiting. This result should have been anticipated, since the irritability of the stomach is probably but a reflection of that excited in the uterus by the growing embryo. As the walls of the uterus become less dense by the development of muscular fibres, its nerves are relieved of pressure, and consequently cease to disturb other sections of the ganglionic nervous system. In one desperate case, however, when everything else failed, and the necessity to sacrifice the fœtus to save the woman seemed imminent, the milk did excellent service.

Mrs. M., six years married, but never pregnant, became so anxious about her childless condition as at length to consent to an examination.

She has enjoyed tolerable health, and experienced but slight local symptoms, except at the monthly epochs. The menses, somewhat irregular as to time, had always been ushered in and attended with severe pelvic pain and distressing general disorder until the year previous, when they gradually became less frequent, painful and abundant. At present they are delayed to the sixth or eighth week, attended with little pain, and marked by a slight pinkish discharge, that continues for a few

hours, or at most for a day or two. In the meanwhile her health has greatly improved in every particular.

The examination, made January 4th, 1875, showed that the uterus was small and curved forward, and the cervix long, slender and pointed, and that, excepting a glairy, albuminous secretion filling in the os uteri, no signs of disease were discoverable.

To me it seemed as though the uterus, failing of perfect development at puberty, had maintained more or less the infantile type, and was now on the point of giving up the monthly effort, and going through the change due at a later age. I introduced a 40-grain solution of the nitrate of silver into the cervical canal, scarified the os uteri, and punctured the neck. The few drops of blood following the knife proved the absence of uterine congestion, and the ropy mass coagulated by the solution, the presence of uterine catarrh. Proposing to repeat the operation the fourth or fifth day after the close of the next period, I left word to be summoned at that time; but to my surprise I heard nothing from my patient until two months had elapsed, when her husband called and stated that his wife, from the failure of the courses and other indications, thought herself pregnant. This suspicion proved well-founded, and also another as to the date of impregnation that she confidently placed at the tenth day after the operation, inasmuch as the labor occurred October 30th, two hundred and seventy-eight days thereafter.

Early in March the nausea, which started almost simultaneously with conception, began to be very troublesome, and attended with vomiting. By the middle of the month all fluids and solids were rejected the moment they reached the stomach, and between whiles the sickness and retching were continuous and distressing. These symptoms persisting in spite of treatment some two weeks or more, and becoming each day more urgent, so that from the want of sleep and nourishment exhaustion seemed not a remote contingency, I discontinued all medicines except injections to unload the bowels, and all food and drink except lime-water and milk in dessert-spoonful doses every few minutes. The patient was placed on her back in bed, and the orders were, in spite of any and every solicitation to the contrary on her part, rigidly carried out by her husband. Eventually, yet after a hard contest of several days, the stomach, which heaved and contracted spasmodically at each spoonful, and threw it off if she raised her head or turned on her side, became more tractable and tolerent, and then began slowly and reluctantly to resume its duties. Thus, happily, the need to free the womb of its burden was averted.

The *debility after confinement* is something more than what is due to the throes of childbirth, or to the drain from the milk glands. The first

would be more apparent at the time, and the second during the progress of lactation. This debility, beginning with the flow of milk, and continuing until the vital forces are brought into harmony with the new conditions, arises from the transfer of the child's means of sustenance from the uterus to the breasts, a revolution so complete as to necessitate the death and disintegration of one organ, and the birth and activity of two secreting glands. In this low state of the system—that often extends to the end of two, three or four weeks—slops disgust the stomach, solids resist digestion, and drugs manifest no remedial power.

The physician, meanwhile, having come to the conclusion that such is the law of nature, the woman is left to wear the month out in the best way she can, encouraged by the hope that the end of the allotted time will bring with it, in the regular order of events, returning health.

As at the inception, so at the close of pregnancy, the ganglionic nerves are subjected to great perturbation; but the last is far greater than the first, since on delivery one function is suspended and another established, the work of one organ is completed and that of two others assumed. The abruptness of the change is felt by both nervous systems, but chiefly by that lesser one which presides over the vital offices peculiar to animal organisms—digestion, assimilation, secretion, excretion, capillary circulation and cell life. The mechanism being thus thrown into disorder, its action is irregular, its movement sluggish, its unity broken and its harmony lost.

At this juncture, when time is deemed the main reliance, a suitable opportunity is offered for a food claimed to be both nutritive and medicinal, by virtue of its elementary principles, to establish its reputation. This it has, in many instances, done conclusively; for the milk is so acted upon by the lime, that the casein and cream are rendered very digestible, and the phosphates, chlorides, iron, etc., very soluble, to such a degree that its nourishing and remedial elements exist in that natural combination the best fitted to impart nervous force, excite tissue changes and renew vital activity.

The last two years I have, during the month, relied upon lime-water and milk as the chief food, and have only allowed other articles, however suitable, as the way was led by the patient's appetite. By the use of from two to four goblets of milk a day, the debility so common in the lying-in room is prevented, inasmuch as the materials for supporting the strength and furnishing the milk are supplied in the same ratio as when a full diet becomes admissible, and that, too, without oppressing the digestive organs or disturbing the nervous system. As a general result, the convalescence has been rapid and the return to the accustomed health complete, and not infrequently there was little evidence

of the shock the woman's system had suffered, or of the drain it was then subjected to by the constant secretion of milk.

In the poverty of the lacteal secretion, the special virtues of milk, brought out by lime, are strikingly exemplified. A goblet with the morning and evening meal, instead of coffee or tea, for lunch, and at bed-time, more than supplies the place of the decoctions, drinks and toddies with which nursing women are so freely and so generally dosed. What is noteworthy, milk in the plain state is hardly equal to other nutritious articles, but, acted upon by lime, is capable both of compensating for the drain by the breasts and improving the quality of their secretion; by which means the mother is kept in good condition and the baby is well-nourished.

With each—the mother and the child—the singular power of the lacteal salts, when set free in the circulation, to quicken the organic functions and invigorate the vital forces, is fully manifested. The following case presents the claims of lime-water and milk as an efficient tonic, a nutritious food, and a real galactagogue.

Mrs. C. had with her first two children very watery milk, that on standing yielded only a thin film of cream. The supply being thus poor in quality though fair in quantity, artificial food became a necessity. As an inevitable result, indigestion, flatulence, diarrhœa and mal-nutrition followed; and yet the children, by the aid of great care at all times, and of country air during the summer, pulled through, but at the expense of much suffering.

As soon as the breasts, after delivery, began the effort at secretion, they became hot, hard, sensitive and swollen, and thus continued until the traction of the child added fissured nipples as new centres of irritation. The wear and tear of constant suffering reduced her so completely, that she rapidly became thin, pale, weak and spiritless. With both children, the ever-recurring suction at the sensitive nipples and the faulty secretion of the milk glands eventuated at about the close of the month in mammary inflammation and suppuration.

Directly the third labor had terminated, a diet of lime-water and milk was adopted, and steadily followed the whole period of lactation. The success of the plan was complete. The child, though nursed exclusively, thrived better and suffered less from indigestion, colic, diarrhœa, etc., than is common to nurslings, until its ninth month, when the premonitory symptoms of returning menstruation thinned the milk, rendered it indigestible, and necessitated weaning.

In this case, the drinking of from a quart to three pints of cow's milk daily, had, through the agency of lime, the wonderful effect to cause a free secretion of rich milk, to prevent irritability of the breasts, to produce a

sufficient supply for the baby, and to restore the strength of the mother.

At the end of three weeks she felt as well as ever in her life, and in six months gained several pounds in weight above her usual standard.

The fresh, vigorous appearance of the mother and the baby was the subject of common remark. The breast milk, when drawn and allowed to stand a few hours, became covered with a thick, yellow layer of cream, much thicker than I have often observed. With the first child this lady drank freely of plain milk whilst in the country for the summer, and yet, though she digested it easily and gained in flesh, the breast milk was not improved in the least. With the third child it seemed as though the lime had the power to transform cow's milk into woman's, and that the breasts acted as filters merely.

In the exhaustion from lactation, the value of lime-water and milk is presented in a still stronger light. The nutritive and medicinal properties developed are greater than those attainable by other foods and the resources of the pharmacopœia combined. Of this statement I will give one example as an illustration.

Mrs. S., a healthy, hardy person, had an abundance of rich milk for both of her children, and allowed each to nurse as much and as often as it desired. The demands of the first, as she persisted in nursing it sixteen months, induced great debility, but those of the second, a very large and hearty child, made serious inroads on her health before the end of the seventh month, although the weather was cool and bracing. Her appetite became capricious, her stomach weak, her blood thin, her pulse quick and her nerves excitable. Shortly the lack of vital force was still more apparent, a clammy perspiration breaking out on the least exertion, a watery diarrhœa starting from trivial errors of diet, and a chill and fever, attended with hot and caked breasts, arising at the slightest exposure to the air. She was directed to feed the baby in part, to take whisky and quinine, to drink lime-water and milk, and to walk or ride out every pleasant day. These directions were complied with very imperfectly, and yet for a couple of months I attempted in every possible way to improve her constitutional status, but to no effect. At length she was told that two ways only were open before her—either to drink lime-water and milk to the extent of four goblets a day, or to take the baby from the breast entirely, as otherwise serious results would surely overtake her when the heat became oppressive and relaxing.

Being alarmed at this dark picture, she waived her repugnance to milk and promised to obey orders implicitly. Soon there was a change for the better. The lime-water and milk agreed with the stomach, excited the secretion of the gastro-intestinal juices, and after awhile awakened a desire for other food. Consequently, as the chyle became more elab-

orated and more richly freighted with nutritive and saline constituents, the assimilation assumed more activity, the blood a deeper hue, and the nerves greater force. In a few weeks the signs of exhaustion were replaced by those of renewed vital energy, and long before the advent of warm weather, her ability to continue nursing the baby was fully shown. Feeling that her health was restored, she remained in the city during the summer, without any mishap or even any serious illness befalling herself or the baby.

In the dementia of the puerperal state, the special advantages of lime-water and milk as food and medicine are equally sustained.

Here the lack of healthy nutrition passes beyond its usual limits, and affects the brain so that its activity becomes impaired by a defect in its tissue changes—a condition more serious than mere anæmia. To reach this, lime-water and milk is as well adapted as for any other form of mal-assimilation.

Mrs. B., æt. 29, the subject of one miscarriage and the mother of three children at term, fell, a few days before the last confinement, into a fatuous state of mind that continued after the birth of her child, February 2d, 1876, to the time when I saw her in consultation, February 23d, with little change, certainly none for the better. The direct exciting cause seemed to be the increased frequency and severity of an epileptic vertigo, petitmal, to which she had been liable at distant intervals since her recovery from scarlatina, ten years before.

These attacks had always been more troublesome during pregnancy, but until the last had never seriously disturbed the brain. She was very anæmic, much emaciated, confined in bed, and still affected with a dark, grumous, lochial discharge. She refused to speak, took neither food nor drink, except by compulsion, slept but little and never soundly, and looked morose, sullen and idiotic.

It was suggested to the attending physician that this was a case of depressed vital power, demanding sleep, food and tonics—a case of anæmia of the brain, due more to mal-assimilation than to the epileptic attacks, which still occurred once or more a day. Consequently it was maintained that small continuous doses of morphia would be more efficacious than the bromide of potassium and other nervous sedatives then in use, and that lime-water and milk in a small quantity and at regular intervals would restore digestion and assimilation, notwithstanding the failure of the ordinary sick diet. The whisky the patient had been taking was diminished in dose and given in the milk. Faithfulness in carrying out the orders, whatever the opposition encountered, was insisted upon as a *sine qua non* to success in the treatment. The patient finding that resistance availed her nothing, soon took each dose as pre-

sented. In a day or two she began to improve, and in a week recovered her reason. In the meanwhile she had five epileptic attacks. In a month she rode to her mother's, and thereafter speedily regained her accustomed health.

In conclusion, I would remark that the efficacy of lime-water and milk in the cases narrated above is equally observable in others, whenever, either primarily or secondarily, the nutritive functions are much at fault. The milk, being rendered very acceptable to the stomach by the lime, may almost always with advantage be made the prime article of diet in the sick room, however diverse the conditions. It is the most digestible, and at the same time the most nourishing food that can be given. It allays gastric and intestinal irritability, offers a duly-prepared chyle to the absorbents, supplies the blood with all the elements of nutrition, institutes healthful tissue changes, stimulates the secreting and excreting glands, and, in a word, provides nature with the material required to sustain herself in her contest with disease.

If it be conceded that nature always accomplishes the cure whenever it is secured, and that drugs merely aid, direct or modify her efforts to this end, it will be self-evident that the food which supplies the vital forces with all the power of resistance they possess is a matter of the first importance, and that milk acted upon by lime, provided it contains all the essential properties of other articles epitomized, and is more friendly than any or all of them, has a range of application almost as extensive as disease itself, whatever its character, and whoever the patient.

ON THE TREATMENT OF CHRONIC PULMONARY AFFECTIONS.

BY H. F. WILLIAMS, M.D.

Sunday, December 17th, 1876, I was called to Mr. M——. At this time he gave the following history: He had been confined to his bed for two weeks, coughing severely and frequently. I succeeded in satisfying myself that he had been coughing for several weeks previous, though he at first denied the fact. He gave no history of severe hæmoptysis, though believed he had on one or two occasions spit "yellow phlegm with bloody streaks through it." His pulse was 110, temperature $102\frac{1}{2}^{\circ}$,

respiration accelerated. He was weak, anæmic, constipated, hectic, with anorexia, and for several nights had had cold sweats. Inspection revealed marked diminution in chest movements of right side, as well as a sunken appearance in the supra and infra-clavicular regions.

Palpation revealed increased vocal fremitus of right side. Percussion revealed flatness in supra-clavicular and clavicular, and marked dullness in infra-clavicular regions.

Auscultation revealed irregular respiration at apex of left lung, and puerile of the remaining portion of the right. I was able to detect a deep-seated moist râle in the scapular region; but the respiration was not otherwise abnormal, with the exception of a few sibilant râles. In the apex I found bronchial respiration, the act of coughing producing quantities of moist râles varying in size from crepitant to large mucous. In the infra-clavicular region the respiration was less bronchial, yet perfectly demonstrable, accompanied by moist râles in diminished quantities. There was the most offensive odor to his breath, and he was expectorating very little. I had been cautioned not to investigate the hereditary history, since the young man had already expressed an opinion not essentially different from mine, as far as prognosis was concerned, and for fear of having his worst fears confirmed he dreaded seeking medical advice. I learned from a friend that his mother had died the year previous with phthisis, and that a brother was in an adjoining room in the last stage of the same affection.

I did not betray any surprise on leaving my patient, and from his reasoning subsequently, there must have been some white lying on my part at our first interview.

I immediately relieved the constipated condition of his bowels by the sol. cit. mag. I then ordered a preparation containing quinine, with spt. nitrous ether as a solvent. The mixture contained glycerine also. I then had prepared by Mr. Cutts a fresh emulsion of cod-liver oil, with the hypophosphites of lime and soda. This comprised the treatment as far as internal medication was concerned. For the immediate relief of the cough I advised the spray of pure carbolic acid (the atomizer used being Codman & Shurtleff's). Of the acid, ten drops were inhaled every four hours.

He was further advised a luke-warm sponge bath every morning, to be immediately followed by a thorough inunction of olive oil.

I have not a daily record of his temperature or of his exact condition. Yet I have notes which will afford ample proof of the efficacy of the means employed. The quinine was given for its antipyretic effect. His temperature the following day had declined to 100°. At the same hour, 5½ P. M., the following morning, his temperature was 99½°,

and in the evening it was 100°. Increased the quinine to three grains every four hours, when his temperature declined to 98½°, and where it remains to-day.

The cough was soon greatly relieved by the carbolic acid, and expectoration facilitated. I continued the acid for three or four days, when I combined with it tr. cubebs and tr. hamamelis, and this mixture he is at present inhaling. The offensive odor from his breath on the following morning was gone.

His condition at present is much improved. He has no appreciable diurnal variation in temperature ; his appetite is a little short of ravenous ; he has from one to two alvine evacuations daily ; he is gaining in flesh and strength ; he says that "he feels as well as he ever did." Yet the apex of his right lung remains in the second stage of phthisis. It may be said that there is nothing remarkable in the history of this case, and I fully concur ; yet there are some points that might serve as texts for volumes. It serves to divide what few observations I shall make into four divisions.

1st. The avoidance of systemic sedatives, and the substitution of local anæsthetics for the relief of cough.

2d. The use of quinine.

3d. The use of alcoholic stimulation.

4th. The efficacy of topical medication in chronic pulmonary affections.

My patient was clearly not in a condition for the administration of an opiate ; yet he was suffering with a cough that was constantly harassing him, and liable at any time to provoke hemorrhage. It is very undesirable practice to administer any systemic sedative where it is of prime importance that the system should be kept in a state of normal action. My first temptation was to resort to morphia or some similar drug. Observe the consequences of such selection. The patient would have said in the morning that his *cough* had been quieted, that he slept more than usual, and, if the effects of the narcotic had not passed off, that "he was feeling generally better." No man in this room would have been so deceived ; he might regret the necessity that compelled the administration of the opiate, but he would haste with all possible speed to the relief of the dried-up glandular secretions, the nauseated stomach, and the doubly-constipated bowels. These relieved, I know he would not consider the chances of improving his patient at all enhanced by repeating the treatment. All this can be avoided by applying to the point of irritation the sedative that is required. In my case carbolic acid did it. It has in others, and I certainly shall give it further opportunities of suc-

cess or failure. Supposing it fails, what possible objection can there be to applying any other sedative in a local manner?

2d. The use of quinine.

There is no question in any one's mind that quinine is one of the most powerful antipyretics we command, and, in my estimation, there is no condition of human ailment where this drug is appropriate where its administration was more imperatively demanded than in the case reported, nor are there many cases where the results of such administration are followed by better results. I say to myself, I say to his friends—I do not to him (for he has no idea there is any organic disease of his lung)—that as long as his temperature remains at 98½°, or, possibly, 99½°, there can be no fatal termination. We all know the significance of this assertion. Whatever has occurred in my patient, there has been no progress of inflammation, no fresh deposit of tubercle; and were it not for the unhappy fact of hereditary tendency, I should be half inclined to hope that, at least, this softened condition of his right lung might become circumscribed, possibly encapsuled, and even cicatrized; and if I am to believe the assertions of more experienced men than myself, certainly the first condition would not be a remarkable one. Not long since, an eminent physician of this city told me that, in his practice, he has ladies who have had consumption from girlhood, have married and reared children, and to-day are enjoying passable health, all the while remaining in blissful ignorance of their true condition. Every one has seen the encapsuled degenerations from some previous pulmonary affection, and we know that in recovery from pulmonary abscess there must be a resulting cicatrix. I am not speaking pathologically—the subject does not require it; for, whatever hair-splitting may be necessary to decide intricate pathological appearances, the treatment, so far as this drug is concerned, is the same. All these happy results are not to follow the administration of quinine; its principal work is accomplished in keeping down the temperature; though some therapeutists ascribe to it the power of preventing abnormal cell-formation. If this is a fact, it certainly is not less important. While the temperature is down, the opportunity for tonics, fats—hypophosphites, if you like—and especially nourishment, is at hand. Every attempt to do this with the temperature at 102° is most likely to be followed by some disturbance in the digestive tract.

3d. The question of alcoholic stimulation.

You will observe that although my patient was exhausted, anæmic, unable to assimilate any substantial food, I did not allow him stimulants in any form. Here was my patient, prior to this attack, in perfect health, stomach never failing him, muscular development faultless: ac-

cording to moral, if not medical, reasoning, alcohol at this time would have been considered detrimental, certainly if given in quantities that its advocates advise in cases similar. Now if in health there is some question concerning its inoffensiveness, what manner of reasoning will convince a man that this question dissipates the moment a patient has hæmoptysis or primary deposit of tubercle? My patient was inclined to constipation; I relieved that. His stomach was disturbed; that was quieted. He had high fever; that was brought down. Very soon he was *hungry*, and he got plenty to eat. He was thirsty, and he had quantities of cool, rich milk.

Alcohol would have had a tendency to increase the temperature. It certainly would have dulled the sensation of hunger. It would have produced artificial animation, to have been followed by depression. While I make this wholesale denouncement of stimulation in the incipient stages, I by no means ignore its efficacy in the later stages or in exceptional cases in *any* stage of the disease. There have been cases reported where enormous quantities of whisky have been taken, with the effect, if not of recovery, certainly of the most marvelous improvement. The details of such cases are unsatisfactory, but it is reasonable to suppose that they have been rapidly reduced to extreme asthenia, by non-resolution of acute trouble. Alcohol may be harmless—nay, it may be beneficial, if it does not increase the temperature abnormally. Authorities agree that this indication should restrict its use.

4th. The efficacy of topical medication.

This is no new idea. It has been practiced for years, and to-day some of the brightest lights in the profession are its firmest advocates.

Perhaps there may be a striking correspondence between its advocates and the believers in Niemeyer's view of the causation of phthisis. He says: "Phthisis arises with rare exceptions through extension of a chronic catarrh," "that a simple, genuine catarrh may extend into the air vesicles in a person of apparently perfect health and vigor," "that healthy men should never feel sure that they will not die of an acute or chronic catarrhal pneumonia—that is, from phthisis—proceeding from a cold, and resulting in caseous infiltration and destruction of the pulmonary substance." I confess, notwithstanding the able reputation of Dr. Flint and others, that it is my appreciation of such a theory that influences me in adopting topical medication. To assert that consumption of the lungs from tubercular process is dependent on hereditary transmission, is equivalent to consigning a very large fraction of the human race to a tubercular taint. That members of a family so tainted live to a good old age, while sisters and brothers die in their youth from phthisis, is pre-

sumptive evidence of some extrinsic cause, and in the majority of cases I believe the cause can be traced to a neglected bronchial inflammation.

Dr. Moritz, in a communication to the St. Petersburg Medical Society, speaking of the results of his trials of carbolic acid in various forms of bronchial catarrh, says that this affection either ceases to appear or is soon cut short. He sprays the whole atmosphere of a small room with the acid, choosing the night as the most convenient time. Every one can testify to the efficacy of carbolic acid in simple pharyngitis. It seems to exert a healing influence upon any diseased mucous surface; it also possesses the same properties of other acids for stimulating and depurating chronic ulcerations involving any tissue. Its general administration alone, and in combination, is evidence enough of the truth of such an assertion. Now if it can be proved that it can be introduced into such portion of the lung as may be diseased, no theory concerning the causation of the disease it finds can contra-indicate its use; and to those who entertain Niemeyer's views, the difference between life and death can be claimed by its timely administration. In other words, pulmonary catarrh can be arrested before extensive degeneration ensues in consequence. Attempts have been made to prove that it is impossible to introduce medicinal substances into the lungs by this method. A physician in New York, failing to obtain the reaction of iodine with starch in the lungs of a dog that had been compelled to breathe a spray of these substances separately, finding the reaction in the pharynx and larynx only, reasons that medicinal agents cannot be made to reach the lungs, more especially the smaller bronchial tubes and air vesicles. If this is a fact, why is it that certain occupations are dangerous from the necessary inhalation of irritating particles that finally induce lung affections? We at once recognize the deleterious effect of noxious gases. The fumes of strychnia have been known to kill. Ether, chloroform, nitrous oxide certainly anæsthetize by the application of these vapors to the lungs.

For the relief of simple bronchial catarrh I have inhaled the ex. pinus Canadensis; in the morning the sputa that have been expelled from the bronchial tubes have been abundantly tinged with the red color of the inhalent used the evening previous. I have seen coagula, as they were coughed up, contracted on their surfaces by the astringent, while their centres were yet in a fluid condition. Any passive hemorrhage can be controlled almost instantly by astringent inhalations. Now all this shows that the remotest parts of the lung can be reached by the atomizer. If a bleeding point can be controlled by an astringent, why cannot a gangrenous tract be disinfected or an indolent tract stimulated?

We all know the effects of moist and dry atmosphere. This physician

sends his patients to Colorado, that to Florida, and another to sea, and so on. Now change of scene, mode of living, forgetting one's self, are all potent elements in the improvement that frequently follows such sojourning; but the influence of the air upon the diseased lungs is an element that cannot be overlooked. It is easy to prove that the lungs can be injured by the inhalation of improper substances; why is it less easy to prove that they can be benefited by the inhalation of proper substances? I hope the time will come when the cure of lung affections can be traced to the topical application of appropriate remedial agents.

OBITUARY.

NATHANIEL GERHARD HUTCHISON, M.D., was born at Marshall, Missouri, June 3d, 1853. He removed to Brooklyn at an early age, and received his preliminary education at the Polytechnic Institute, and subsequently pursued his studies in Germany.

He began the study of medicine in 1872 with his father, Dr. J. C. Hutchison, attending lectures at the Long Island College Hospital, and afterward at the College of Physicians and Surgeons, N. Y., and graduated at this institution in 1875.

During the summer of 1874 he held the position of Assistant Surgeon on one of the steamers of the White Star Line from New York to Liverpool.

In the spring of 1875 he was appointed Assistant Physician to Kings County Hospital, and after a short time resigned it to engage in private practice.

He entered with enthusiasm into his chosen life-work, and was rewarded by unusual success.

In the May number of the PROCEEDINGS of the Medical Society of the County of Kings, of which he was a member, is published his only contribution to medicine; a carefully-reported "Case of Chronic Synovitis of the Knee-joint, Treated by Aspiration."

During his brief professional career, he held the positions of Assistant Surgeon to St. Peter's Hospital, Assistant Surgeon of the Twenty-third Regiment of Brooklyn, and Attending Surgeon to the Brooklyn Orthopedic Infirmary; the last two he held at the time of his death, which occurred April 10th, 1877, after a short but painful attack of diphtheria, which he contracted in the faithful discharge of professional duty.

The conscientious and intelligent zeal and the indomitable perseverance which he brought to his patients, were the causes as well of his professional success as of his untimely death. The large and sympathetic attendance upon his funeral services was positive proof of the esteem in which he was held in the community in which he lived.

JNO. D. RUSHMORE, M.D.,
T. R. FRENCH, M.D., } *Committee.*

DR. FRANCIS WESLEY BIRD was born in Belleville, Upper Canada, on the 7th of February, 1834, and died at his residence, No. 305 Degraw Street, Brooklyn, on the 15th of April, 1877.

Dr. Bird was educated in the Normal School for Upper Canada, from which institution he received a first-class qualification in 1854.

After this time he was engaged as school teacher, and had charge of a grammar

school at Ashawa, County of Ontario. About this time he commenced the study of medicine, and graduated at Queens College, Kingston, in 1859. In 1861 he was appointed Coroner for the united counties of Northumberland and Durham. Shortly after this he came to the United States, and was appointed Assistant Surgeon in the Fifty-first Regiment, N. Y. Volunteers, November, 1862. At the close of the war he commenced practice in Brooklyn. He was a member of the Kings County Medical Society, and was appointed to a position on the Brooklyn Board of Health in 1876.

While engaged at his duties for the Health Department, he was taken suddenly sick, and died after an illness of five days from hepatic disease.

Dr. Bird was an honorable gentleman of high literary attainments. He was generous, attentive and kind to the sick, and he will be missed by a large circle of friends both here and elsewhere.

He leaves a widow and two children. His remains were buried in Greenwood Cemetery.

By Divine decree our fellow member has been removed from us, and prematurely cut off in his professional career. Therefore, be it resolved:

That we hereby give expression to our feelings of sorrow, for the loss of our esteemed member, Francis Wesley Bird, M.D., whose presence in the profession and in this Society we had hoped to enjoy for many years to come.

Resolved, That we tender to the family of the deceased our high appreciation of his worth and talents, and hereby convey to them our deepest sympathy in their affliction.

ALEX. J. C. SKENE,
G. WACKERHAGEN, } *Committee.*

——THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The June meeting will be held on the 19th, at which there will be presented the following papers:

The Lactometer, by Dr. J. H. Raymond.

Popular Pathology and Ordinary Treatment of Some Forms of Skin Diseases, by Dr. S. Sherwell.

——THE MEDICAL REGISTER for 1877-8 is promised for June 15th; see the editor's announcement on another page. No effort or outlay has been spared to make this, the fifteenth volume, worthy of the support of the profession.

THE GYNECOLOGICAL TRANSACTIONS, volume one, has just appeared in almost faultless style, under the editing of Dr. Chadwick, of Boston, from the Riverside Press. The book is a credit to the Society that issues, and stands in marked contrast to the ordinary publications of societies—speaking merely of the mechanical presentation of the work. The "Contents" may be seen on another page. In connection with the memoir of the late Gustav Simon there is introduced a fine steel-engraved portrait.

ITEMS.

——American Metric Bureau.—During the past year there has been incorporated, under the law for missionary societies for educational purposes, an association in which physicians will take special interest, the American Metric Bureau. Its object is summed up in Art. 2 of the Constitution:

"The object of this Bureau shall be to disseminate information concerning the Metric System; to urge its early adoption; and to bring about actual introductions wherever practicable. To this end it will secure the delivery of addresses; publish articles; circulate books, pamphlets and charts; distribute scales and measures; introduce the practical teaching of the system in schools; and in all proper ways, as far as the means at its disposal will allow, the Bureau will urge the matter upon the attention of the American people till they shall join the rest of the world in the exclusive use of the International Decimal Weights and Measures."

Though no canvass has been made, and very many people deeply interested have never heard of the existence of this Bureau, it already numbers about three hundred members, among them many of the foremost men of the country. The work is so largely educational that the professors and high school teachers have the largest percentage in the roll of members, but after them comes the medical profession.

Organized with the hope of helping forward the reform by concerted action, it has astonished its warmest friends by the influence exerted. The work has repeatedly doubled, and the Secretary with two assistants finds it possible to keep up the work of the General Office, 1 Tremont Place, Boston, only by great effort, answering letters by printed forms, referring applicants to committees or members, and in all ways making the most of the means at his disposal.

The Bureau has secured legislation in favor of the international measures; has caused addresses to be delivered in many sections of the country; articles and items to be printed in various periodicals; and indeed has done all that could be done without paying salaries to the workers. Space allows us to mention only what we esteem the most important of its many standing committees—the trustees of the Sinking Fund. They have in charge a fund subscribed for scattering the actual weights and measures as widely as possible throughout the country. These are in no case given away, but are furnished at from one-sixth former prices upward. As a result of this ability to get the measures so

cheaply, very many people are supplying themselves, and every measure sent out is a missionary for the reform. Whenever seen it provokes inquiry, and the Bureau holds that knowledge of the system is all that is required to bring it into general use. The result of this distribution is being widely felt in the increased interest taken in the introduction. From this same fund are supplied charts and books illustrating everything connected with the system, and the trustees, holding that any person enough interested to become a member of the Bureau will certainly use such things to advantage, present each member with copies. The Bureau depends for its support mostly upon voluntary gifts. The members are assessed pro rata up to a certain amount once each year, to pay for postage and stationery, including printing the monthly Bulletin:

We extract from page 55:

PHYSICIANS.—The system is gaining ground very rapidly among the medical profession, where a moment's thought will show that it would naturally make most rapid headway.

1. Because of its great convenience in writing and compounding prescriptions, in dividing doses, in computing quantities required during given times, etc.

2. Because our physicians have learned what the system really is in their chemical studies, and to thoroughly understand it is to wish to adopt it.

3. Because of the cosmopolitan character of medicine. A prescription from any one of the score of countries using the system is liable to find its way into a physician's note-book, and it is a great convenience to send it to the druggist without spending an hour in adapting it to our tangle of measures.

4. Because our medical men, more than almost any other class, are free from that jealous conservatism and bigotry which forbid a fair examination of a thing, though it promises the greatest good, simply because it was not in the *credo* of their fathers.

Weights and measures enter so little into the every-day life of the other learned professions—law and theology—that the interest in those quarters must be prompted by pure philanthropy, while every physician has a practical personal interest in the adoption.

The druggists, who have facilities for weighing and measuring in the metric system, report a constantly increasing number of prescriptions written in the new form, and we may look to be cured (or killed) in accordance with the International Measures before our clothes are made or our provisions dispensed in its denominations.

Also from page 122:

PHYSICIANS.—We mentioned in the November Bulletin that the system was making rapid progress among the physicians. At that time we purposed to give a list of those actually using it in writing their prescriptions; but it is evident that that would be simply starting a directory for the entire medical profession of the country.

We are receiving in almost every mail, letters from every section of the country, containing news of the adoption of the system by physicians. The leading medical periodicals are constantly advocating the change, in communications, articles and editorials. There seems to be no serious obstacle in the way, and so much is to be gained, that the old system must rapidly give way to a better.

The leading medical journal of New York says in a recent editorial: "We have little

doubt of a very general adoption of the metric system in this city, and of its early extension to other parts of the country."

It is hoped at an early day to issue a special circular to the physicians of the country, pointing out the great advantages of the adoption.

Our readers who are specially interested in this movement should put themselves in communication with the General Office, 1 Tremont Place, Boston.

——The Pharmaceutical Association of Kings County, instituted a few months since, has already a membership of nearly one hundred, under the presidency of Mr. G. C. Close. This organization has an important work before it, which merits the co-operation of all the best members of its constituency, and the well-wishes of the medical profession. A new drug act is under consideration, which it is proposed to bring before the Legislature of next year.

——Office Thieves.—This city and others have lately been the fields of much office-thievery. In Philadelphia there has been so much of it that "the stringent rule of doctors' houses is that not a soul, even though he be a bishop, shall be admitted to the office during the absence of the physician, unless the servant keep guard." In New York there is a fashionably dressed "lady" who has spoiled many an office; she goes so far as to hire a coach at some adjacent livery, to be charged to the account of the physician whom she designs to rob. These thieves make sure that the doctor is not at home before making their visit.

——The Transactions of the American Medical Association have been received. They are contained in two volumes; the first of which contains 719 pages devoted to the minutes, reports and published papers. Fully one-third of its available space is given to sanitary and epidemiological matters. The second volume, of 670 pages, is given up to a Prize Essay on the Excision of the Larger Joints of the Extremities, by Dr. H. Culbertson, of Zanesville, Ohio. This essay contains laboriously-prepared statistical tables of 3,893 cases of operations upon joints. The surgical anatomy of the principal joints is copiously illustrated.

——The American Medical Association.—The Twenty-Eighth Annual Convention will be held in Chicago, June 5th. As only half the usual number of delegates have been appointed this year from this Society, those who find it impossible to attend will please notify the President.

——The International Transactions.—The volume of the great Medical Congress of last year is in preparation, and can be ordered from Dr. C. Wister, 1,303 Arch Street, Philadelphia. The price is six dollars in advance.

——The College of Physicians and Surgeons was addressed by Bishop Coxe at its late Commencement. A morning paper reports him as follows: "The speaker declared the medical profession the special guardian of this civilization, the brains of the family, who go to a greater or less extent into the lives of all. The Bishop trusted that the old college would go forward and shake itself from its dust. The building at Twenty-third Street and Fourth Avenue was denounced as unworthy of the noble Faculty of the College of Physicians and Surgeons. The institution ought to have new quarters, and Columbia College, in her wealth and power, should extend her boundaries, and enclose this ancient and conservative college within her walls." What New York school will be the first to introduce the graded course, preliminary examinations, and the other elements of the modern medical school?

——Of Funerals.—Recently, in a daily paper, the following was observed in the deaths column: "Owing to the cause of death (scarlatina), the funeral services will be attended by the relatives only." This is a salutary and humane warning, and an example which, as it becomes popularly known and followed, will in all probability be the saving of many a life. The death referred to, sad to relate, was in a physician's family—a little daughter of three years; but others besides physicians will soon recognize the importance of the step as a means of checking the spread of contagious disease. The New York Health Board has declared public funerals dangerous where the death was caused by scarlatina, diphtheria, measles or whooping-cough; and the family are required to limit the attendance to as few as possible, and those only who have had the disease of which the deceased had died. The Boston Board has issued a circular conveying recommendations of a similar nature. The conviction of the power to control contagion appears to be taking deep root. This, in itself, is a good sign, if it is true, as Lord Derby has said: "Men are very slow to learn the extent to which their destinies are in their own power; they are apt to be astonished if you point out to them that nine-tenths of the calamities that have afflicted the human race are directly and obviously the work of men's own hands." * * * A recent medical journal reports that a wake over the corpse of a woman dead from typhus resulted in the seizure by typhus of every one there present—more than twenty—of whom a third died.

——The Discovery of Anæsthesia is the subject of an article in the *Virginia Medical Monthly* for May, by Dr. Marion Sims, wherein he declares that Dr. Crawford W. Long, now of Athens, Georgia, was the first man to intentionally produce anæsthesia for surgical operations, and that this was done with sulphuric ether in 1842, antedating both Wells, Mor-

ton and Jackson. The article closes with an earnest plea for the families of all these pioneers in anæsthesia; that Congress be called upon by the whole medical profession to appropriate some fitting pecuniary reward and recognition of the untold blessings that have flowed from their labors.

——Dr. C. B. Cutter died in August of last year, but notice of the fact has hitherto been omitted. He was a native of England, but a graduate of the College of Physicians and Surgeons, New York. After an illness of several months, he died August 29th, 1876, of phthisis, and his remains were taken to Chester Cemetery, Claughton, England, in November following. He had passed his thirty-second year.

——A New Tenant-House has been erected on Hicks, near Harrison Streets, that is worthy the attention of all that pass that way. Compared with many of the hives in which the poor of our cities collect, it is almost palatial. *The Sanitarian* gives a detailed account of its interior arrangements, and remarks that its founder, Mr. White, "is entitled to the gratitude of the public for this example of intelligence, skill and humanity." The house contains accommodations for more than forty families, and is managed by a resident janitor. It is stated that more houses are to be erected on this admirable pattern.

——The Revision of the Pharmacopœia.—The debate upon the reform propositions of Dr. Squibb continues in the various constituent societies of the convention. The medical journals throughout the country have also considered the question of the proposed changes, and are in great measure friendly to them. Philadelphia, however, so far as heard from, is unanimous the other way. The discussion in that quarter, while it is for the most part courteous and in good temper, shows a little tendency to warmth and bitterness; and the disagreeably retroactive missiles of sarcasm and personalities have been occasionally thrown. The last *Medical and Surgical Reporter* is very severe on the recent editions both of Pharmacopœia and Dispensatory, but does not commit itself in favor of Dr. Squibb's plan.

——The Diet Dispensary has removed to 21 DeKalb Avenue, near Fulton, and a branch has been established at the Atlantic Avenue Dispensary, on the corner of Hamilton Street, now Waverly Place.

——The Dental Engine, indispensable in the dental surgery of today, has also pre-eminent advantages in general surgery, especially in the treatment of necroses and exostoses. Dr. Mathewson, of this city, was one of the first to publish his employment of this delicate, manageable and most powerful appliance; his case was one of exostosis in auditory meatus.

——The Sanitarian.—Our Librarian acknowledges the receipt of a full set of this journal, kindly presented by its editor, Dr. A. N. Bell.

——The Enemies of Vaccination.—The practitioners of homœopathy have, as a rule, arrayed themselves against this greatest gift of medicine. And now a recent local event indicates that the "Eclectics" are to do the same. Their Society held a meeting here, which was addressed by a Dr. Gunn, of New York, who, among other like extravagances, expressed the opinion that "among all the fallacies of medicine, vaccination is the most absurd and pernicious to the well-being of the human race."

——Diphtheria in our Charities.—There is an instructive paper by Dr. Edson, of this city, in the *Medical Record*, No. 339, on an outbreak of diphtheria in the Home for Destitute Children—twelve cases and three deaths. Errors in plumbing, and consequent escape of sewer gas, were, after a diligent and prolonged search, discovered; and with the introduction of a ventilating shaft to soil-pipe, the attack ceased *instanter*.

Two other institutions in this city and New York have been the scenes of similar experiences. There has been some loss of life in each instance. It seems desirable that some measures—of a legislative character, perhaps—shall be adopted, which will in the future fix the responsibility of such needless sacrifice of life. Knowledge with regard to the fatal influence of sewer-poison is rapidly spreading—even among plumbers.

It may be mentioned here as a singular fact, that Simon's "Filth Diseases" does not particularize diphtheria as a disease caused by filth emanations, although it has been so recognized by practical men for many years.

——The Renewal of Prescriptions in Germany has recently been forbidden by law, except on the order of the physician originating the prescription, whenever it shall contain powerful medicines, such as drastics, emmenagogues, emetics or opiates.

——Skin Diseases.—Dr. Duhring's Atlas continues in its second part, just issued, the excellent character of its illustrations.

——Hay-Fever, or rose-cold, is, in a certain proportion of cases, developed in June and July. A medical gentleman, himself a victim, desires to collect information concerning as many cases of this affection as possible. Those willing and able to oblige him will please address Medicus, 398 Fulton St.

——Good Beef Tea can be obtained at the Diet Dispensary (see p. 133) at 14 cents a pint by those who are able to pay. The poor pay nothing for food given on the order of a physician.

——Fares to Chicago via Hudson River R. R. have recently been reduced from $25 to $15. (See Amer. Med. Association, p. 131).

——Books.—There is a decided tendency towards a centralization of medical and other bookstores in New York within a few blocks of the Astor Library. Macmillan & Company, the publishers of the *Practitioner*, have recently moved to 22 Bond Street. A branch of the Lippincotts' is not far distant.

——Dr. E. A. Lewis has been chosen Assistant Surgeon to the 23d Regiment.

——Dr. H. A. Bartlett has been appointed Superintendent to the Asylum at Flatbush.

——Dr. T. P. Corbally's name is announced as one of the Associate Editors of The Sanitarian.

MEDICAL SOCIETY OF THE COUNTY OF KINGS

OFFICERS AND COMMITTEES FOR 1877.

President.....Alex. Hutchins, M. D., 796 DeKalb Av.
Vice-President.....C. Jewett, M. D., 310 Gates Av.
Secretary.....R. M. Wyckoff, M. D., 532 Clinton Av.
Assistant Secretary.....N. B. Sizer, M. D., 336 Greene Av.
Treasurer.....G. G. Hopkins, M. D., 375 Grand Av.
Librarian.....W. W. Reese, M. D., 193 Joralemon St.

CENSORS.

G. W. Baker, M. D., J. H. H. Burge, M. D., J. D. Rushmore, M. D.
R. M. Buell, M. D., F. W. Rockwell, M. D.,

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.
(1874 to 1878.)

Drs. J. Byrne, Drs. R. M. Wyckoff, Drs. A. J. C. Skene,
B. A. Segur, W. H. Thayer, C. H. Giberson,
S. G. Armor, J. L. Zabriskie, A. Mathewson.

FOR DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

The next convention is to be held in Chicago, June 5th, 1877.

Drs. Baker, Drs. Fearn, Drs. Kuhn, Drs. Segur,
Bodkin, Hawley, Pilcher, Vrooman,
Burge, Hutchins, Szigethy, Zabriskie.
Byrne, Hutchison, P. L. Schenck,

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. A. N. Bell, T. P. Corbally, J. Walker, W. E. Griffiths, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, Drs. W. G. Russell, Drs. R. M. Buell,
W. E. Griffiths, N. Matson, R. W. Wyckoff,
J. A. Jenkins, F. W. Rockwell.

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, JUNE 19, 1877.

JABORANDI.

BY ALEXANDER HUTCHINS, A.M., M.D,

President of the Society.

Read before the Medical Society of the State of New York, June 20th, 1877.

Jaborandi* is to be estimated, not as a specific against certain diseases, but as contributing to the relief of a symptom common to many diseases; and, by provoking the rapid and energetic action of a certain class of structures, to relieve indirectly certain morbid states.

The palpable effect of a full dose of Jaborandi is a speedy, profuse and continuous perspiration, accompanied by a similarly speedy, profuse and continuous salivation.

A drug that will, without great primary elevation of temperature (such as occurs when artificial perspiration is produced by restricting the loss of heat), set up these actions in from 20 to 90 minutes, continue them from two to five hours, producing from 300 to 500 cubic centimeters

* *Class*, Rutaceæ; *Order*, Pilocarpus; *Species*, Pennatifolius. Jaborandi has been employed for a long time in South America, and received its first notice under the various names of Jaborandi, Jaquarandy and Jamquarandi, from Dr. T. J. H. Langgard, in his "Diccionario di Medicina Domestica," Rio Janeiro, 1865.

An early mention of Jaborandi, quoted from Dr. Piso's "Travels in South America," by Dr. Robert Boyle, in 1772, may be found in *New Remedies*, February 15th, 1876, p. 64. A figure of the plant (or of an allied variety) was published in the same journal of May, 1877.

JABORANDI (*Pilocarpus Species*).

(For description, see page 146.)

(nine to 15 ounces) of perspiration and from 100 to 1,100 cubic centimeters (three to 33 ounces) of saliva, with very slight disturbance of the general system and with no unpleasant after effects, is deserving of notice, particularly when it is remembered that no other known drug produces the same or analogous effects.

And this notice it has received. For, since its introduction into Paris, by Dr. Coutinho, in the summer of 1873, Jaborandi has received an amount of detailed experimental and journalistic attention altogether unparalleled in the history of any one drug in the same space of time.

I have appended to this paper an ample bibliography of Jaborandi for any who may be interested in following out its details, and shall not touch upon its experimental history.

Allusion to Jaborandi is pertinent; for in Bartholow's "Materia Medica," which is but now fresh from the press, while due credit is given to its therapeutic uses, the statements of its physiological actions are so misleading—being rather a rehearsal of its exceptional actions, and not discoverable in the ordinary administration of the drug—as to justify the rehearsal of the results of later researches. Bartholow's Preface is dated June, 1876, and his authorities quoted are all from journals of January and February, 1875, whereas the vast volume of experiment with Jaborandi has been accumulated during the years 1875 and 1876.

The usual sequence of a full dose of Jaborandi is a very simple one. In a few minutes a slight warmth is felt over the entire body; the face is slightly flushed; a copious secretion of saliva is poured out, and a free perspiration breaks over the entire body. During this period of from two to five hours, there is a slight occasional lowering of the temperature from $\frac{5}{10}^{\circ}$ to $1\frac{5}{10}^{\circ}$, and an acceleration of from 10 to 30 pulse beats. Towards the subsidence of these effects, the patients almost invariably fall into a quiet sleep, awaking refreshed and inclined to eat.*

* Robin observes that salivation, perspiration, the augmentation of the lachrymal secretion, and of the nasal and bronchial secretions, may be regarded as the primary action of the drug on the secretory organs; but, whenever these effects of hyper-secretion fail, or undergo material diminution of their intensity, compensatory phenomena are observed in the digestive tube, and these are of two orders. One set is normal, consisting of extreme thirst and variable appetite, which last is sometimes deficient and sometimes exaggerated. Another set is accidental, and of only relative frequency; it includes vomiting and diarrhœa. If the patients are allowed to drink at will, vomiting is a common result. A little coffee should be given. To avoid this, Jaborandi should only be administered when the patient is fasting, and the saliva, which is poured out, should not be swallowed. Vomiting, especially when accompanied by the discharge of bilious matters, only occurs when sweating is not established. When violent, Jaborandi should not be administered. Diarrhœa is of frequent occurrence, and usually occurs before sweating commences; it is of little importance, and generally subsides in a few hours, ceasing, in fact, so soon as the drug is discharged from the system. —*Gazette Medicale de Paris, April, 1875.*

There are occasional modifications of this quiet history (and, judging from my own experience, the variations are markedly exceptional), such as hiccough, nausea, vomiting, diarrhœa and disturbance of vision; but these seem to have relation to the size of the dose, the form of the drug, the proximity to a meal and swallowing the saliva. Also there are reported cases where the drug failed to produce any, or very little, diaphoresis, but these, too, were connected with the untoward symptoms just alluded to.

The after effects are negative, and no unfavorable results have been observed when feeble patients were debilitated by the excessive sweating. It seems to be established that children are far less susceptible to its action than adults.

Dose.—The larger number of experiments have been conducted with the four gramme (60 grains) dose of the leaves in infusion. At first the dregs and all were administered; but this is needless, and likely to provoke nausea, vomiting and diarrhœa. A strained infusion of one dram of the coarsely-powdered leaves to three ounces of water constitutes a full dose. The effect can be gained usually, and with less quantity, by giving half ounce doses of the same infusion every thirty or sixty minutes, or the same effects can be maintained, with less violence, by continuing these doses at longer intervals. The cold infusion is equally efficacious with the tepid. A good deal of inert and spurious drug has been in the market, but the genuine can now be obtained. The fluid extract (sixty minims to the dram) is in use, but my own observation is that this is more likely to offend the stomach than the infusion. The pilocarpine* (one grain representing one dram of the leaves) will produce the same effects. The infusion per rectum will act equally efficaciously as if given by the mouth. A subcutaneous injection of one one-hundredth grain of atropia will arrest the diaphoresis produced by three or four

* Pilocarpine (the alkaloid) is a semi-fluid, yellowish in color and soluble in water. This alkaloid was, in 1875, isolated from the leaves and stalks of the pilocarpus pennatifolius, almost simultaneously and quite independently, by Mr. A. W. Gerrard and M. Hardy. Dr. Dumas recommends a dose of from one-half to two grains, from which no injurious influences need be anticipated. The action on the salivary glands is the most marked, and commences very soon after its administration, so that, in the course of five hours, a rapidly increasing and then slowly diminishing salivation takes place, especially from the submaxillary glands. The total excretion of saliva in this period, in one case, amounted to 755 grammes (11.657 grains, more than one and one-half pounds avoirdupois). Copious sweating occurred an hour after the commencement of the salivation, which slowly diminished in the course of a few hours. Biliary vomiting usually occurred, the urinary secretion was greatly diminished, the pulse was slowed, the temperature lowered, the pupil dilated.—*Centralblatt f. d. Chirurgie, No. 52, 1875.*

grammes of Jaborandi, and, preceding the drug, will prevent the diaphoresis.

Mode of Action.—Bartholow classes it with tobacco, aconite, veratrum—agents which depress the motor functions of the spinal cord and sympathetic. Certainly the symptoms all point to a relaxation of the walls of the arterial system, and the suddenness with which they appear to an affection of the centre for the nerves supplying the vessels. All the appearances may be explained by the supposition of the laming of the central organ of the sympathetic nervous system, and it seems most probable that it is on this organ that the Jaborandi specially acts. (*Berlin Klin. Woch.*, No. 11, 1877).*

Indications.—A drug that is capable of withdrawing, on the average, one-sixth of the water of the blood, might be supposed to be efficacious in causing the absorption of effused fluid in the system, preferably to vapor or hot baths with the subsequent packing (*Deutsches Archiv. für Klin. Med.*, 1875), and is destined to occupy an eminent position among the sudorifics, sialogogues and moderators of febrile action (*Gazetta Med. Lombardia*, July 17th, 1875.) Even where it is difficult to produce sweating by the ordinary means, the administration of Jaborandi is followed by abundant perspiration (*British Medical Journal*, February 27th, 1875). "The therapeutic effect of Jaborandi is analogous to that of the Turkish bath, and is indicated in rheumatism, anasarca from cardiac or renal disease, also in chronic bronchitis and emphysema, affections produced by cold, albuminuria, diabetes, the poisoning due to miasm or morbid poisons, the eruptive fevers which have been checked in their evolution."

CLINICAL HISTORY.

ANASARCA.

Dr. Gubler reported (*Journal de Therapeutique*, April 10th, 1875) that in anasarca, with effusion in the serous cavities, the infusion of the leaves gives satisfactory results, the œdema diminishing and the effusion being re-absorbed. There is a common consent that Jaborandi rapidly relieves the anasarcous condition, no matter upon what cause it may depend.

Dr. J. H. Hunt, of Brooklyn, reports four cases which may be classed under this head.

1. Chronic desquamative nephritis, aged 18, anasarca general. Daily steam baths discontinued, by reason of the superinduced severe prostration. One dram doses of fluid extract at night would produce profuse perspiration, awaking, after an all night's rest, refreshed, though the pillows and clothes would be saturated with perspiration. The œdema was kept down, but not completely subdued.

2. Aged 16, ankles and lower parts of legs œdematous, so that the skin lay over the

* "Sphygmographic tracings, taken before and during the operation of the drug, show that it causes a marked lowering of the systemic blood pressure, owing to a relaxation of the arterioles."

top of the shoe in a fold. Half dram doses of the fluid extract caused free perspiration about the lower extremities and a gentle moisture over the entire body. In thirty hours, ankle reduced to normal size.

3. Scarlatinal nephritis, aged six. Urine scanty. Ten minim doses of fluid extract every three hours for a week kept up gentle perspiration, while the urine increased to five pints daily.

4 Aged thirty. Fatty heart. Ankles greatly œdematous. Ten minim doses of fluid extract with infusion digitalis and cit. fer. et quinine produced "terrible" diaphoresis (as patient termed it), and in three days ankles reduced to normal size. In all these cases the appetite improved during the administration of the medicine.

PLEURITIC EFFUSIONS.

M. Crequy reports having cured effusions into the pleura by four gramme doses, when all other means failed. (*London Med. Record*, April 21st, 1875).

Dr. Craig has found it efficacious in removing pleuritic effusions. For this disease, in his opinion, it will yet prove a most valuable medicine; for, in a few hours, in addition to profuse perspiration, twelve or sixteen ounces of fluid may be withdrawn from the blood, with very little disturbance to the general system, which must tend, in no small degree, to promote absorption of fluid from the pleural cavities. (*Edinburgh Med. Journal*, January, 1876.)

BRIGHT'S DISEASE.

A case is reported from Bellevue Hospital treated partially by dram doses of the fluid extract, where, in addition to the profuse perspiration, the remedy acted as a sialogogue to such a degree, that twenty-two ounces of saliva were collected in four hours. (*The Med. Record*, August 5th, 1876).

Dr. Bruen details seven cases where Jaborandi was used to relieve the suffering caused by dropsy, where uræmia appeared inevitable, and reports that he knows of no agent which will afford so great relief as this drug. The use of steam baths cannot be substituted in its place. (*Phila. Med. Times*, April 14th, 1877.)

DIABETES INSIPIDUS.

Dr. Gubler found it of service on account of its sudorific properties. (*Jour. de Ther.*, April 10th, 1875.)

Dr. Laycock argues that the proximate cause of dropsy being the amount of water in the blood, the disease has both functional and anatomical relations with the sudoriparous glands and the kidneys. He reports two cases. In one the urine declined steadily in fourteen weeks from 300 to 120 ounces; in the other, in seven weeks, the quantity of urine in twenty-four hours was reduced from 158 to 98 ounces. (*Lancet*, August 14th, 1875.)

Dr. Ringer had a well-marked case which was uninfluenced by Jaborandi, but in which the quantity of urine was greatly reduced by ergot. (*British Med. Journal*, December 25th, 1875.)

Dr. Fairfax reports a case of a lady suffering for ten years with almost constant thirst, and a diuresis that amounted to an average discharge of a gallon every three hours. No perspiratory action of skin, bowels irregular, progressive emaciation, specific gravity of urine 1.003. Half dram doses of the fluid extract at bed-time prevented sleep by the profuseness of the salivation. The dose was diminished and used three or four times daily. In three months the quantity of urine was reduced to three pints in twenty-four hours and specific gravity 1.008.

Dr. F. reports another, a second case, of five weeks' duration. Diuresis very great,

thirst intense, skin dry. Half dram doses of the fluid extract twice daily relieved all these symptoms—salivary glands active, skin moist, thirst relieved, appetite improved, quantity of urine greatly diminished and specific gravity increased. (*Virginia Med. Monthly*, April, 1876.)

Dr. Newman reports the case of a child, aged eight years, troubled for three years with excessive diuresis and almost constant thirst, depressed spirits, poor appetite, dry, scaly skin, tendency to constipation, general emaciation, debility and some fever. Three gallons of urine excreted in twenty-four hours; two gallons during night, of a light straw-color; specific gravity, 1.003 to 4, tests for albumen and sugar negative. Fifteen drops of the fluid extract, morning and night, continued from April 10th to the Fall, effected permanent restoration. (*Virginia Med. Monthly*, December, 1876.)

RHEUMATISM.

MM. Robin and Gubler have employed Jaborandi in acute rheumatism, and on the next day have noticed a lowering of the temperature, and a remarkable diminution of the articular pains, which, indeed, almost entirely disappeared.

Dr. Tadlock reports a marked case of acute rheumatism, cured in six days by Jaborandi. (*Med. and Surg. Reporter*, May 19th, 1877, p. 440.)

ASTHMA.

Dr. Gubler succeeded in five cases in aborting the attack by giving an infusion of the leaves, relief being obtained so soon as its sialogogue and sudorific effects appeared. He found the Jaborandi to produce instantaneous amelioration of the asthmatic paroxysm of emphysema. To one man a cup of tepid infusion was administered during an excessive paroxysm of asthma, who, fifteen minutes afterwards, began sweating and expectorating. Almost immediately after this the respiration became easy, the patient declaring that the malady had been taken from him as with the hand. (*Jour. de Therapeutique*, April 10th, 1875.)

TETANUS.

A case of tetanus, following excision of the breast, was treated by four gramme doses of Jaborandi daily for 38 days, at which every symptom of the tetanus disappeared. It produced a very abundant salivation. (*Lond. Med. Record*, April 15th, 1876.)

FEVERS.

Dr. Craig has used Jaborandi in several cases of fever where the tongue was dry and the mouth parched, and, by giving small doses of the infusion every few hours, was enabled to restore the flow of saliva, keeping the tongue and mouth moist. (*Edinburgh Med. Jour.*, January, 1876.)

MUMPS, METASTASIS TO TESTICLES.

Dr. Czernicki treated a case of orchitis consequent on metastasis of mumps, utilizing its sialogogue properties to divert the metastasis by increasing the functional activity of the salivary glands. (*Gazette Hebdom.*, November 14th, 1875.)

Surgeon-Major Desbrousses records an entirely similar case successfully treated by the same remedy. (*Gazette Hebdom.*, November 15th, 1875.)

INFLUENZA.

In severe cases with violent headache the sialogogue and sudorific effects of Jaborandi greatly relieve the symptoms of this affection and shorten its duration. (*Jour. de Ther.*, April 10th, 1875.)

AS A GALACTAGOGUE.

To ascertain whether Jaborandi was antagonistic to belladonna in respect to its influence on the secretion of milk, Drs. Ringer and Gould instituted experiments in two cases. "We administered thirty grains of Jaborandi to a woman thirty-eight years old, confined of her ninth child four months previously. During suckling she had very little milk, and the quantity had become much less of late. We gave her the medicine at ten A. M. She had suckled her child seven hours before. In ten minutes the drug produced its usual symptoms; in half an hour her breasts, which previously were flaccid, became tumid and distended, and on pressure yielded considerably more milk. In forty minutes the increase was still more marked, jetting forth in four or five streams. To another woman, aged twenty-five, whose child is thirteen months old, we gave two doses of thirty grains, as the first had no effect. She emptied her left breast every ten minutes by pressure, and each of the three first emptyings yielded 40 minims. As soon as the perspiration and salivation became free, the quantity rose to 80 minims. The next time yielded 100 minims, the following 155 minims, the next time 80 minims. The salivation and perspiration at this time ceased. The next observation yielded 125 minims, the next 87 minims, the next 70 minims and the last 40 minims." (*Lancet*, January 30th, 1875.)

Dr. Will details the case of a mother who had been unable to suckle her previous child on account of the want of milk, and whose breasts, on the fourth day after delivery, despite all efforts, were perfectly flaccid, and on pressure not a drop of milk could be obtained. Half ounce doses of the decoction were given, 2½ drams to six ounces water, three times a day, a strong decoction being at the same time applied to the mammæ. After two doses milk appeared. It continued to increase in quantity, and in ten days the drug was discontinued, as the secretion seemed to be fairly established. The child has every appearance of being well-nourished. (*British Medical Journal*, September 15th, 1876.)

Dr. Bartholow used a fluid extract successfully in a case of deficiency in the secretion of milk in a nursing woman. "As the milk glands correspond in structure to the sudoriparous glands, and are merely differentiated and specialized for their particular office, the effects of this drug in increasing the production of milk might have been, *à priori*, expected." (*Materia Medica and Therapeutics*, p. 387.)

JABORANDI AND BELLADONNA.

Though Jaborandi and Belladonna are in so many ways antagonistic, it has not been found that pilocarpine proves of any benefit in belladonna poisoning.

"The relation between Belladonna and Jaborandi is partly of analogy, but mainly of opposition. Jaborandi resembles atropia in quickening the pulse, flushing the face, and in exciting a more decided influence in adults than in children. On the other hand, it is diametrically opposed to atropia in its action on the salivary, sudoriparous and mammary secretions, on the pupils and on the minute arteries. Further, the tendency of belladonna to cause delirium contrasts with that of Jaborandi to cause prostration and sleepiness."

The foregoing constitute nearly, if not quite all the specific cases in which Jaborandi has been employed, which have been reported in the journals up to this writing. There is good reason for this apparently meagre showing of interest.

Jaborandi is emphatically unique and distinct in its physiological ef-

fects, and, as was suggested in the opening sentence of this paper, it is to be estimated for its ability to fulfill certain conditions arising in a multitude of morbid states.

In this view it has been diligently studied, as witness the careful observations of Robin and Gubler, and the French pharmacologists; the elaborate examination of its properties by Ringer, Gould, Craig and others in England; Ambrosoli's series of experiments with fifty hospital and private patients; Riegel, who wrote enthusiastically in its favor in an extensive treatise; Merkel, with his twenty cases from the Nuremberg Hospital; Lohrisch, with a large number of observations from the Clinical School of Frerichs; Penzoldt, with seventeen cases from the Clinical School of Erlangen; Rosenbach, with twenty-three cases from the School of Jena; Stumpf, with fifty-four cases from the Clinical School at Munich; Vulpian, Kohler and Soyka's experiments on animals; and the lately developed and growing interest among American observers. All these observers are in entire agreement as to the energetic diaphoretic action of Jaborandi. (*Deutsches Archiv. für Klin. Med.*, November, 1875).

My own experience is entirely in harmony with the recognized properties of this drug, and I have had no failures to produce the prompt and active physiological actions with the Jaborandi leaves obtained from Heydenreich Brothers, though these gentlemen say that some they had a year ago proved utterly inert.

The sum of the recorded experience is, that when diaphoresis is desired in any form of malady, it can be attained promptly and surely by Jaborandi, while the size of the dose and the frequency of administration will regulate the profuseness and continuance of the diaphoresis, to meet any contingency desired.

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The illustration on page 137 was originally published in the May number of "NEW REMEDIES," and the following description is from the same journal.

1 is an entire leaf; 2, leaflet, under side, showing venation; 3, an entire fruit, natural size, with peduncle. The inflorescence is believed to be a raceme six or eight inches long, the top in this specimen having been broken off. The fruit (3) resembles that of a specimen of a Cuban plant of the genus *Galipea*, referred by Asa Gray to *Pilocarpus heterophyllus*. When perfect the fruit consists of five carpels, of which not more than two or three are usually developed to maturity. When ripe the carpels separate into two valves (5), and then resemble minute cockle-shells (4), with the valves open exposing the animal. 5 and 7 show the inner case; 4 and 6 show the curved ridges which exist on both inner and outer surfaces of the carpellary valve; 8, placenta separated; 9, seed, *a hilum;* 10, endocarp without the placenta; 11, cotyledon.

POPULAR PATHOLOGY AND ORDINARY TREATMENT OF SOME FORMS OF SKIN DISEASE.

BY S. SHERWELL, M.D.

It seems to be a fixed idea with the old women of both sexes, and I am afraid with some few medical men too, that all diseases of the skin may be classed under two, or at least under three, heads: scrofula, salt rheum and shingles. Every disease of the derma of long continuance and obstinate nature is, by those first-mentioned parties at least, included under the first two heads; those in which pain or irritation is a prominent symptom, in the last; and all present, I have no doubt, have

found frequently in practice their extreme readiness to give you their counsel as to the advisability of curing, let us say, for instance, a "scald head," or ordinary "eczema capitis," and their enumeration of the dangers of its "striking in," and so forth.

Quite a number of doctors, I think, recognizing the great obstinacy of some of these cases just mentioned, seem to content themselves, after making a feeble effort, by leaving the curative processes to Nature, who, after all, is entirely competent to the task, but sometimes, unaided, takes two or three years about it; they, the medical men, saying, incidentally, that it is due to teething, etc., and that by and by, with attention to cleanliness, etc., the child will get over it. Also, among more enterprising members of the profession, one finds a fairly large number, who, out of the whole list of remedies of the pharmacopœia, seem to have chosen two, and but two; the Koran might be paraphrased and read, "There is no constitutional remedy save one constitutional remedy (arsenic, to wit), and ungt. zinci oxidi benzoati may be applied with profit."

Attending, as I do, the clinic for skin diseases at the Brooklyn Eye and Ear Hospital, I think I see as many of the subjects of skin disease among the poorer population of our city as any other one man in it. On an average, every time I attend I receive one new case of infant or child of tender years with what is called "scald head," "milk crust," etc., or, more correctly, that form of mixed eczema and seborrhœa of the scalp known under those terms.

I find in only very few cases that I have been the first physician applied to for relief: one to five doctors have already had it in charge; the mother has always had a bottle and a salve by her, but nothing seems to have done it any good. The salve may have been excellent, the internal remedy appropriate; but the mother, having received no explicit direction how to apply the one or administer the other, the remedies, good enough in their way, might as well have been applied to the roof of the house. Not one mother in ten, unless precept upon precept be given, will make the application as it should be.

I would like to consider the etiology a moment before going on to treatment. First of all, struma is undoubtedly a fertile cause; the flabby flesh and sodden tissues, fair and easily-irritated skin, and glandular system of these children, make them very ready subjects. "Difficult dentition, probably," though an overrated cause, I believe to be more a concurrent symptom of a dyscrasia present; physiological dentition should be, and is, next to painless. "Want of cleanliness": some midwives and people in the lower ranks of life leave the vertex unwashed for months, believing the encrusted dirt and sebum protects the fontanelles,

etc. "Excessive cleanliness and use of irritant soaps"—not an uncommon cause. Another, the great activity of the hair follicles and their attached sebaceous glands during infancy, during the shedding of their lanugo, or milk hair, present at birth. A great many other causes: by persistent irritations of caps too warm and of too coarse material, dyes, parasites, and so on without end.

The first thing to do after inquiring into and removing cause, if removable, is, if the head be caked and crusted all over, as it usually is, to direct mother how to remove that crust, and the easiest and simplest way to do it. In the books many plans are advised—as, by a lotion of dil. liq. potassæ, poultices, etc., etc. I do not think it is so simple, unirritating, and entirely comprehensible by the average Irish mother, as to tell her to make and apply an oily lather in the following way—viz., by taking a teaspoonful of raw linseed oil or olive oil in hollow of left palm, and as much more warm water, rubbed up with the end of a piece of castile or other soap until a yellow lather is formed, that to be applied over, on, and into crust; to be repeated "da capo," at intervals, for half an hour, an hour, or even longer, if necessary, until the coating becomes perfectly soft (a little sapo viridis is as good as any other soap). A handful of bran, just moistened with water, will often act as a good, bland scouring agent; then the crust may be removed, all, or nearly all, by washing with lukewarm water, without more soap, and thereafter gently drying. The scalp will then be ready to receive the unguent or lotion judged proper. If the child can be seen immediately after this process, or the mother's or nurse's discretion can be sufficiently trusted, I am in the habit of lightly powdering the reddened, sodden-looking surface with the mild chloride, on account of its alterative action; absorption of it to any serious extent is not to be feared; the glandular elements of skin are more willing to give than to receive, as their superabundant secretion testifies. You will often find that application soothe and comfort exceedingly the child, and lessen the itching and heat. The after treatment will simply be to keep this up. I refer to the cleansing of the head. Once a day is the usual thing, and preferably in the evening; but always once a day at first. But the application should be changed thereafter, except in presence of a specific diathesis calling for hydrarg. —. I do not usually use the Wilson benzoated oxide of zinc ointment; it is too irritating, as a rule—if used, it should be diluted one-half at any rate—but do use largely Hebra's ung. diachyli, or lithargiri, as modified by myself, mine being made largely with cod-liver oil, instead of the olive oil used by him. Olive oil, I find, gets rancid sooner, and thereby irritates, the unhealthy, partly rancid, sebaceous secretion helping it to do so much quicker. There are two drug stores in the city which keep

this made up for me—one at corner of Bond and Fulton, another at corner of Clinton and Fulton Streets. The ordinary druggist would not be thankful for the task, as it requires a great deal of time and attention in making, and is somewhat disagreeble to sight and smell, as well as to prepare; if old, or somewhat thick, it can be rubbed up with a little additional ol. morrhuæ, and a few drops of the oil of lavender renders the odor supportable. While this is excellent when well prepared, on account of its soothing and mildly constringent character, a dozen others nearly equally good will suggest themselves; as, for example, simple cerate, with either benzoic acid or tinct. benzoin. co., rubbed up. The acetate of lead, or litharge, made into ointment with vasseline or cold cream; calomel ointment, diluted with cold cream, etc.; a mild carbolic salve may be used—it should be quite mild; and others without end. And unguents alone need not be exclusively relied on. Always observing the rule once each day to remove, by the gentle means already alluded to, the accumulated scab and old applied matters, and the application of the new to the affected part or parts. The mother's task will get lighter each day if this is carried out well, and there is no fear of relapse, usually, if common sense indications for local and constitutional treatment are attended to—as, for instance, attention to the "prima via" and relief of diatheses, as by the use in struma of emulsions of cod-liver oil, with iodides of potash and iron, mild vegetable bitters, and the like. The child's hair, if long, should be cut—shingled is better, simply to save trouble. Some mothers rebel at this, when there will be a good opportunity to enlarge upon the necessity of thorough cleansing, hair or no hair, especially at the first.

Of one great fear I think you can with a good conscience relieve the mother's mind, and that is about the danger of its striking in, and giving the child fits, water on the brain, etc. By all dermatologists this is regarded as a myth; and its apparent basis easily accounted for, by reflecting on how many instances this (hydrocephalic trouble) is one of the sequences and corollaries of the strumous habit; it is only another outcrop of the inherited constitution, at best, which causes both that and all trouble.

I have gone thus into detail in respect to this affection, not because I at all consider myself superior in intelligence to this body, to most of whom it is doubtless as well known as to myself; but because these details are *not attended to* as they should be by a large body of outside practitioners, and *missionaries are necessary*. There are a great many babies now being wheeled and carried about in this and other towns, whose mothers, to say nothing of their other relatives, would have a far greater

pride and joy in them, were their heads not covered with this disgusting, but (with patience) entirely curable disease.

One last word may not be amiss. I am inclined to look upon this trouble, when it affects in a marked manner the sulcus at back of the auricle and even auricle itself, as pointing to a suspicion of struma (I do not know a better term); and this is strengthened when I find a somewhat triangular upper jaw, and a history of very early or late dentition, either will do, always having commenced first in upper jaw; and if one finds the incurvated and notched upper incisors of Hutchinson, combined with the rest, it always seems to me to be clearly diagnostic, and they then receive appropriate constitutional treatment; it is in these cases that occasional dustings with the mild chloride, with the old cleanliness, etc., seem to do so much good. One point of possible error in diagnosis. In this affection, as in all affections of the scalp, the post-cervical glands will be usually found enlarged and indurated, and are of no diagnostic value respecting diathesis of patient; their enlargement means simply irritation, nothing more.

There is one other form of seborrhœa without the eczematous complication, occurring generally in older children, as from eight to twelve years; this is dry and crusty, and looks something like ringworm (tinea tonsurans) of scalp, but differs from it, as will be observed on close examination, in the fact that there is no evidence of anything like inflammation in the hair follicles, or of there ever having been any; the hair is not brittle and broken, as in the parasitic diseases, and has not lost its polish so materially; and on pulling sufficiently hard on a hair as to extract it with bulb, you will bring out together with bulb usually a cake of sebum and epithelium, more or less soft and mushy; on exercising the same traction on a hair, in case of the various tineæ, it is liable to break in the shaft, and each end of the ruptured shaft will form a microscopic brush; if the hair comes out from the follicle also, it will be found brushy, and without a bulb, usually.

The treatment of these dry cases is the exact opposite of that of the ordinary infantile form; here irritants and stimulants are in order. A favorite application with me, after cleaning scalp in the way referred to so often, or even by harsher means, is to apply to the spot—for you will generally find this form quite circumscribed—a mixture of ol. cadini and ol. morrhuæ, one part to seven or stronger, or a lotion of hydrarg. bichlor. in equal parts of an emulsion amygdal. amar., and spts. dest.—½ gr. to 1½ grs. to the fluid ounce. It is well to use these alternately sometimes, and with intervals of rest for a few days, the skin, like the stomach, resenting monotony.

The bichloride lotion above mentioned in proportion of grs. one-half

to the ounce, is an excellent and elegant preparation in cases of pediculi capitis, etc., and much better than the unguents. Some children, for instance, of the well off class, are often allowed to get a good colony of pediculi capitis started before they are found out; in every eruption having for seat the back of head, over nucha, and about the position of occipital ridge, pediculi should be looked for. Children even in the best ranks of life, coming often into contact with their inferiors, at least in personal cleanliness—servants and so forth—from want of close scrutiny, the doctor, relying on the known character of his "clientelle," refrains from thorough examination lest he should hurt their feelings; but he may depend if there is but a single louse on the head it will be found in that locality; when that neighborhood is densely populated they will settle elsewhere. . . If consulted by poor persons whose heads are one mass of vermin, as has happened a few times with me, a safe and cheap parasiticide is obtained by saturating the hair with kerosene every third or fourth day, for about three consecutive times, allowing the oil to remain on an hour or even longer the first time, and then a good washing; this is naturally disagreeable, but it is efficient and cheap, a great desideratum for those people.

The "Plica Polonica" yet mentioned in books, and about which more than forty books were written before pedantic medical literature was superseded by common sense, was simply a matted abomination of hair, fetted by the labor of innumerable lice. I saw two such cases in Hebra's clinic, both young Polish girls, in which the masses of hair resembled helmets or crests. In those cases a powerful pair of scissors and the judicious use of kerosene soon did away with the Plica Polonica.

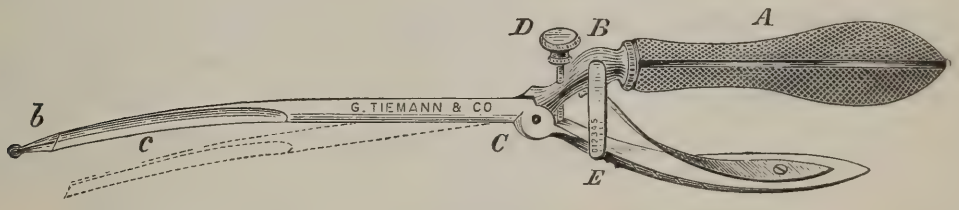
One more popular prejudice I would like to combat. An extraordinary number of otherwise fairly-informed people still believe in the existence of a specific disease they call the "seven years' itch"; it seems to be a part of their religion. This opinion is confined to the laity, of course. I need not say, gentlemen, that because a man has performed once on the Scotch fiddle, he need keep it up for so long a time as that. Scabies is not an American disease. Almost all cases I have seen here may be traced to the public institution. It needs to be treated mildly but persistently; no sulphur unguent is necessary; they are repulsive and dirty, and are often the cause, if strong, of an eczema as difficult to cure as the itch itself. The most satisfactory treatment is first a warm bath, and then application of a lotion of the sulphide of potassium, one-half ounce to a quart of water, over the body, most to worst affected parts, allowing it to dry on, then changing underclothing; or better still, the addition to the full bath of several ounces of this (potass. sulphidi); the patient remaining in the bath for at least ten minutes, and then going into a

clean bed, not having rubbed himself too dry. This bathing should be gone through with every fourth day for three or four consecutive times, even if the disease is apparently cured, and underclothing religiously changed each time. This treatment is exceedingly mild, leaves scarcely any sulphurous odor behind, and is besides exceedingly satisfactory in those forms of lichen or anomalous papulo-vesicular diseases attended with great pruritus, which are apt to be confounded with scabies. The rapid methods for the cure of "scabies," which are spoken of in various of the books, are some painful, some disgusting, and such as will not be submitted to in this country. People will not submit in this or other skin diseases to become, or appear to become, lepers, if only for a day or two. These last remarks are especially applicable to the tar treatment, by Hebra, for the cure of psoriasis, etc.

A NEW DOUBLE-BLADED LITHOTOME.

BY JO. C. HUTCHISON, M.D.

In November, 1876, I requested Messrs. Geo. Tiemann & Co. to construct for me a double lithotome for bilateral lithotomy, which possesses all the advantages of Dupuytren's instrument (of which this should be regarded as a modification), and being more simple in its construction, it is more easily manipulated and is less expensive.



The handle is made of ebony, three inches long and checkered (A); this holds (B) a bistoury, curved on the flat, six inches long, its cutting edge looking towards the right, the back being thick and terminating in a rounded, heavy probe-point (b) to fit the groove of any lithotomy staff. A second bistoury (C) is joined to the other by means of a screw, its beveled point resting against a section of the probe of the first one, and its cutting edge looking towards the left. By this arrangement the blunt back of one blade conceals and protects the edge of the other, so that when the screw (D) is brought home, the two blades become solid like a well-rounded staff, equal in size to number four of the English

catheter scale. By approximating the wooden handle of the first and the steel lever of the second bistouries, the cutting edges are diverged, the extent of the incision being regulated by the screw (D) and measured by the index plate (E).

To use the instrument, the membranous portion of the urethra having been opened, either by the crescentic incision of Dupuytren or the straight incision of Civiale for medio-bilateral lithotomy, which I prefer, the lithotome is introduced closed into the groove of the staff, with its concavity directed upwards; when it has fairly entered the bladder, the instrument is turned upon itself, so that its convexity is upwards, the stone is felt with it and the staff removed. The blades are then expanded to an extent previously fixed upon, and slowly withdrawn in the middle line. By this means the prostate gland is divided obliquely downwards and outwards (in its longest diameter), on both sides, to any extent which may be required. This instrument may be used both for adults and children.

Amussat, in order to simplify bilateral lithotomy, substituted for Dupuytren's instrument "a sort of scissors, with cutting edges on their borders when opened, but which are blunt when shut" (*Vulpian's Surg.*, Third Am. Ed., Vol. 3, p. 916). With this instrument a transverse instead of an oblique incision was made, and all the indications fulfilled by Dupuytren's instrument were not accomplished by it. The lithotome of Dr. Briggs, of Nashville, is the same as Amussat's, except that it is somewhat curved, and in this respect it is better. In both, however, the scissors handles are objectionable.

I have used very satisfactorily the lithotome of Prof. A. C. Post in a number of operations. It is not so simple an instrument as the one here described; it divides the prostate transversely instead of obliquely, and is more expensive.

ITEMS.

——The "Proceedings."—With this number, it will appear that we have bowed to the demands of those who say that a table of contents is essential to every well-regulated modern journal. One reason why we have not faced the music before has been, lest our modest bills of fare should appear meagre. But our *friends* will pardon that under the circumstances, while the unfriendly ones are too few to be taken into the account.

Now in respect of our friends—the medical journals who exchange with us—who make quotations from our pages, we thank you for the almost invariable credit which is given us, in spite of the clumsy handle

or name which it seems necessary for us to wear. It certainly is not easy to give it in full or abbreviate it intelligibly. We suggest that hereafter you simply acknowledge by the words "*Proceedings*," *Brooklyn*. Everybody understands already, or will soon, what that stands for.

——Exchange List.—We take this occasion to present our thanks to our reciprocating friends:

Am. Journal of Med. Sciences (Phila.)
" " " Pharmacy "
" Medical Bi-weekly (Louisville).
" " Association.
" Practitioner "
Archives of Surgery (N. Y.)
Boston Jl. Chemistry.
British Medical Journal (London).
Canada Lancet.
Canadian Jl. Med. Science.
Cincinnati Med. News.
Clinic.
Chicago Med. Jl. & Exam.
Detroit Med. Jl.
Druggists' Circular.
Georgia State Bd. Health.
Hospital Gazette (N. Y.)
Journal d'Hygiène (Paris).
" of Inebriety.
" " Insanity.
" " Health.
Louisville Med. News.
Med. & Surg. Reporter (Phila.)
Maryland Med. and Chir. Faculty.
Michigan Med. Society.
" Bd. Health.
N. J. Medical Society.
N. Y. Academy of Med.
" Med. Jl.
Ohio Medical Recorder (Columbus).
" " and Surg. Jl. "
Pacific Med. and Surg. Jl.
Philadelphia College of Physicians.
Physician and Pharmacist.
Public Health (London).
" " Mag. (Montreal).
Sanitary Journal (Toronto).
Sanitarian.
Scientific American.
Southern Med. Record.
St. Louis Clinical Record.
" Med. & Surg. Jl.
" " Brief.
Virginia Medical Monthly.
Western Lancet.

It is possible there may be a few omissions from this list, but it is sufficiently full to indicate the wide circle of our acquaintance. It is simple justice to add, that the amount of intelligent editing and diligent research which this body of periodical literature exhibits, is a most important element in the constant advance of the medical art.

——Gastro-Elytrotomy.—On the 23d of June Dr. Skene operated successfully on a rachitic woman thirty-seven years of age. At this writing the mother and child are doing well. The case was most unpromising. The thighs were anchylosed at right angles to the abdomen, and the legs deeply flexed on the thighs. The knees could not be separated beyond 1½ inches. The antero-postero diameter did not exceed 1½ inches. The sacrum was at right angles with the spine, and there was an antero-posterior direction to the lumbar vertebræ. Deep scarring about the hips indicated the previous existence of large abscesses. Internally, previous peritonitis had obliterated all possibility of fine dissection, as plastic attachments had connected vagina, peritoneum, blad-

der and uterus. The vagina had lost its usual distensibility, and incision into it was through a dense, thick mass of organized lymph. The child could not possibly have been delivered through the natural passage; and the success of the operation, in defiance of these difficulties, not only reflects credit on the operator, in meeting these unexpected emergencies, but settles the classical character of the operation itself. Drs. Corey, Cushing, Hunt, Schwetzer and Hutchins were present at the operation.

——The Medical Society of the State of New York held its Seventy-first Convention on June 19th, 20th and 21st. There were present from this Society, Drs. Squibb, Ball, Bell, Byrne, Giberson, Hutchins, Hutchison, Matthewson, Segur, Thayer and Wyckoff. Drs. Prout and Segur were elected permanent members. The next volume of the Transactions will be edited under the supervision of Drs. Wyckoff and Squibb.

——Dialyzed Iron.—Until a very recent date this remedy has been imported from France and Germany, but it is now being produced on a large scale in this country. It should be examined by all physicians who are desirous of finding an easily-tolerated form of iron. This preparation is exceptionally agreeable to the palate and stomach, and if as potent as agreeable will be widely useful. From a chemical lecture in the *Med. and Surg. Reporter*, by Dr. S. Weir Mitchell, of Philadelphia, we quote: "It is a neutral solution of the peroxide with which I have been experimenting largely of late. It is commonly given in doses of thirty to forty drops a day, which would be a small dose, as the solution contains twenty-four grains to the ounce. I have given it freely by the drachm or half-ounce without its causing annoyance. The preparation is certainly tolerated well by some people who do not bear other forms of iron." It has been used with advantage in this city in surgical anæmia and febrile states, where iron is cautiously employed, if at all. As to strength, twenty minims are equivalent to seventeen minims of the tincture of the muriate.

——St. Peter's Hospital.—The Tenth Annual Report of this useful Institution has appeared in a neat pamphlet. It covers the period of 1876. 778 cases were admitted. 524 cured, 104 improved, 63 not improved, 95 deaths—of which 40 are charged to phthisis. The out-patient service had 2,000 new cases in this, its first year.

——Leucocytes.—At a recent "greenroom" conference, the following transpired:

Prof. What is the diameter of the leucocytes?

Candidate. About the $\frac{1}{800}$th of inch.

P. Hardly as large as that. The authorities say that they are but $\frac{1}{2500}$th inch.

C. Indeed! Is that so? They *look rsight* larger than that.

P. That will do, sir. You may go.

——Sea-Side Home, at Coney Island, has been enlarged this year, and can now receive 120 mothers and young children. It is conducted by Mr. R. D. Douglass, Superintendent of the Children's Aid Society. Physicians having patients to recommend to this charity, should bear in mind that the office, at 61 Poplar Street, is open for the purpose of receiving applications from 8.30 to 9 A. M.

——Ovarian Cyst.—Electrolysis has been again employed in this city for the above disease. The case, an unpropitious one for any sort of operation, died at the end of three days.

——Strawberries are believed to have the property of cleansing the teeth in a decided degree. It is not an uncommon remark that these fruits render the teeth white. Various experiments have been made within a year or two past to isolate and determine what acid or other constituent it is that has the effect mentioned, the object being to make it the basis of a new dentifrice.

——L. I. C. H.—The Eighteenth Annual Commencement was held June 21st, at the Athenæum. The graduating class numbered thirty-three. H. H. Kane, valedictorian. The address was delivered by the Rev. Dr. J. B. Thomas, of this city.

——Case of Aneurism of the left primitive carotid cured by the application of electricity immediately to the surface of the tumor.

In the *Revista Medica do Rio de Janeiro*, Dr. J. Pereira Guimaræs publishes an account of the successful treatment of a case of aneurism by means of electricity.

The tumor extended below the clavicle, so that it was impossible to ligate it; and the employment of electro-puncture, as well as the injection of coagulating substances, was contra-indicated. Under these perplexing circumstances, the operator determined to apply electricity directly to the surface of the tumor, in the hope that it might favor coagulation.

The operator employed an instrument that gave a current nearly equal to that of the electro-magnetic instrument of Gaiffé, and the current was applied with a force equal to that usually employed in treating cases of muscular paralysis. Both electrodes were placed upon the tumor, sometimes near together and at others as far apart as possible. The application lasted two minutes, and was frequently interrupted because it caused much pain. After four applications, made at intervals of from two to three days, the tumor had perceptibly diminished and

become harder; it then began to present symptoms of local inflammation, which was controlled by the application of ice. Two applications were subsequently made, and ten days after the last the tumor was reduced to two-thirds of its original size, was much harder, and the pulsations were more moderate. In this condition the patient left the hospital for his home. He was seen two months afterwards by Dr. G., when it was completely solidified. There was no perceptible pulsation, and it was about half its original size. It continued to diminish gradually, so that in a year after the operation there remained only a hard nodule of the size of a small coin, satisfactory in appearance.

In a note appended to this extract in the *Gazeta Medica da Bahia*, we find the following interesting statement: "In this most interesting case, the brilliant result obtained by the distinguished surgeon was, I believe, due to the inflammation of the walls of the tumor produced by the direct action of the electric current. Physiology and clinical experience show clearly the influence of the inflammatory process going on in the internal coat of the vessels upon the coagulation of the blood; and the great majority of the therapeutic means employed in the treatment of aneurisms, excepting the ligature, are effective by reason of the inflammation which they cause. In a case of aneurism of the plantar artery, in which I assisted my colleagues, Drs. Couto and Caldas, the aneurism was treated by the subcutaneous injection of ergotin, a method recommended by Langenbeck; this was quite successful after an erysipelatous inflammation of the foot, caused by the operation, had subsided.

"Whatever may have been the *modus* of the cure, the treatment employed by Dr. G. was attended by the most complete success, and deserves to be more extensively repeated." [T. P. C.]

——Dr. J. N. Freeman has sailed for a vacation of six or eight months in Europe.

——The Massachusetts Board of Health.—The Eighth Annual Report of this ever-welcome series has been received, a comfortable volume of 500 pages, abundantly illustrated with engravings, charts and tables. Various local sanitary issues are discussed, including sewage, stream-pollution and zymotic prevalence. The *pièce de résistance*, however, is the Secretary's (Dr. C. F. Folsom) essay on "Disease of the Mind."

——Virulent Contagion.—Diphtheria entered a family of four, two children and two parents: all died in quick succession. Nearly every servant in any way connected with the family also died. The family physician died after an illness of two days; he is supposed to have inocu-

lated himself while performing tracheotomy. A friend, his physician, also contracted diphtheria, and died soon after. This occurred in Paris. A recent French journal states that five physicians of that city have, within a short time, fallen victims of diphtheria. Two of them contracted the disease in consequence of sucking the air through an obstructed tracheotomy tube. In their attempts to thus free the tube they became inoculated. A medical journal, in commenting on these sad occurrences, advises that some form of instrument be devised which will substitute the surgeon's mouth in extracting diphtheritic membrane. Such an instrument, when devised, will probably have other uses found for it, and, among them, the exhaustion of poison from poisoned wounds or the parts bitten by animals.

——MEMORABILIA is the name given by Dr. Louis Bauer to a series of cases recently begun in the St. Louis *Clinical Record*. They relate in part, at least, to cases that have been memorable for their difficulty, to the mistakes of eminent physicians, their errors in diagnosis and delinquencies in ethics. They promise to be well-spiced with personality: the names of Drs. Baker Brown, Robert Lee, Alonzo Clark and Prof. Frerichs, and their various mistakes, are frankly and explicitly given.

One case of large *gastric ulcer*, not recognized during life, although passing under the observation of Drs. Bauer, Schnetter, Clark of New York and Frerichs of Berlin, is that of a male aged thirty-six; the symptoms being chiefly vomiting, anæmia, headache and muscular prostration. Not satisfied with the diagnosis of gastric catarrh made out by some New York physicians, and the patient being wealthy, it was concluded to send him to Berlin, to Prof. F. This was done, and the professor laughed at the idea of sending abroad so trifling a case—it was "a mere fatty enlargement of the liver"—recovery to be prompt. Three days later the patient died from hemorrhage from the stomach. A post-mortem made by Cohnheim and others revealed an ulceration near the pylorus, one and one-quarter by three-quarters inches in size, opening into the coronary artery of the stomach. The liver was small rather than large, although the gall-bladder was distended so as to be five and one-half inches in length. There is no little interest in the case, as showing the necessity of caution in regard to casual examinations of this class of apparently trifling maladies. Dr. B. adds to its interest by making it a text for a most severe lecture on the behavior of the Berlin professor. "We were astonished," he says, among other sharp points, "that a man of Dr. F.'s high standing and acknowledged superiority should take so contemptible an advantage of the absent physicians of the patient, to undermine the confidence and trust which the latter had reposed in us

without limitation. This iniquity found its own reward in succeeding developments"—namely, the death of the patient.

Another case is that of a retro-uterine hæmotocele, which was regarded as malignant by three very prominent practitioners of London. Entire recovery in six months.

——Sulphur Disinfectant.—The bisulphide of carbon, as a disinfectant, is recommended in the *Lancet*, on account of the ready and safe manner in which sulphurous acid gas may be generated from it. The bisulphide is a dense, mobile liquid, heavier than water, extremely volatile, burning in the air like alcohol. It can be burned in an ordinary spirit-lamp, pains being taken to keep the top of lamp well stoppered, or closed by screw-cap, so as to prevent volatilization of the liquid, which has its boiling point as low as 102° F.; and also to confine its odor, which is ordinarily very nauseating. A pure article, however, is made, which has very little smell. One grain of the bisulphide eliminates about three cubic inches of sulphurous gas. Or the bisulphide may be mixed with sperm oil or kerosene, and then burned in a properly-constructed oil-lamp. A lamp has been devised by Mr. T. W. Keates which can be easily moved about (size 3 by 9 inches), and may be applied to disinfect almost every desirable place or thing, from a hospital to a coach. It is especially suitable for the disinfection of ships, and all forms of receptacles of infected bedding and clothing.

——Revaccination is to the general public what the safety-lamp is to the miner. It affords a protection which only exceptional circumstances render inefficacious.—*Med. Times and Gaz.*

——New Cure for Dipsomania.—At Saugerties, New York, a mineral spring has been opened which is said to have the astonishing property of curing inebriates of their craving for alcohol. Several topers have drank of its water, and declare that it entirely supplants their accustomed intoxicants. The water is strongly impregnated with sulphureted hydrogen gas.—*Louisville Med. News.*

——A Psychical Remedy.—The *Canada Lancet* is responsible for the following "remarkable case": A lady had been a long time an invalid, and had been under a great variety of treatment, but without any apparent benefit. She was induced to try a course of "electric pills," in consequence of which a speedy return to health was brought about. These pills having been inquired into, were found to be neither more nor less than the ordinary *cachous aromatises*, such as are used to render the breath fragrant. From this and similar instances in which apparently imponderable agents have been followed by appreciable results, the *Lancet* draws the lesson that it will not do to sneer at "faith," or imagination, as a remedial element in a certain, by no means insignificant, class of cases.

——Harmonious Relations in Belgium.—At Antwerp, measures have been taken by the physicians and pharmacists, acting through a joint conference committee from "both branches of the medical corps" (*Am. Jl. Pharm.*), which promise to establish a friendly understanding such as has nowhere yet been found. This committee have succeeded in framing a short code of regulations, which have been adopted by Antwerp and several other cities of Belgium. Under this system of mutually-binding ethics, the physician must avoid the furnishing of drugs to his patient, and the prescribing of secret preparations; the pharmacist must refrain from giving medical advice, the substitution of prescriptions, and the advocacy of secret and proprietary remedies: and both shall avoid, in the presence of the client, every form of depreciatory reflection or unfair remark.

——The Bearing-Rein.—Not a little sympathy has been expended by certain of the foreign medical journals, on the sufferings and perils of the equine race, by reason of the unreasonable use of the check-rein. Quite a number of physicians are reported as having abandoned the use of this form of conventional cruelty.

——Vaccination Judicially Considered.—Lord Chief Justice Cockburn made the following declaration from the Queen's Bench in November, in the case of the Keighley Board of Guardians, who have been persistently obstructing vaccination in their district: "They have no doubt been actuated by conscientious motives, but it is not for members of a constitutional community like ours to set up their individual judgments against that which is the law of the land. It may be that here and there some mischief may have resulted from the practice of vaccination; but when we bear in mind that which we historically know, although, perhaps, these defendants may not know it, that before vaccination was introduced the small-pox was one of the greatest plagues and horrors that ever desolated a land; that it swept away its victims by thousands and tens of thousands; that it was a source of the greatest terror to the whole community; and that this plague has, practically speaking, been put an end to by this mode of dealing with it, we feel that this fact should influence the minds of all persons in favor of vaccination, as it has the Legislature, and the whole of the enlightened and educated part of the nation. That, however, is not the ground upon which we proceed. We proceed upon the ground that it is for the subject to obey an Act of Parliament, and for this court to enforce obedience."

——Dr. Albert Vickers died suddenly of cardiac disease, June 6th, at his residence, Clinton, corner of Warren Street, a locality long familiarized with his name. Dr. V. was a graduate of the University of Maryland; he joined the county society in 1866, soon after coming to Brook-

lyn. He leaves a widow and two children. He was still a young man, and is the fourteenth physician under fifty years of age who, within a year, has died in this city.

——Medical Organizations.—"Organizations have been found by far the most effective means of bringing about good; and the good of the community is, to the physician, second only to the care of those immediately dependent upon him. * * * More has been accomplished by the union of force in the State and national societies, in the last quarter of a century, than by all the non-society physicians of the land; yes, ten times more, although the latter are in the vast majority. This consideration should be reason enough for every enlightened physician to attach himself to a society."—*Med. and Surg. Reporter.*

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The July meeting will be held on the 17th, at which there will be presented the following papers:

The Lactometer, by Dr. J. H. Raymond.

The Old and the New in the Pathology and Treatment of so-called Ulceration of the Cervix Uteri, by Dr. A. J. C. Skene.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

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DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK. (1874 to 1878.)

Drs. J. Byrne, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. L. Zabriskie, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

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PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, JULY 17, 1877.

THE OLD AND THE NEW IN UTERINE PATHOLOGY AND THERAPEUTICS.

BY A. J. C. SKENE, M.D.

When I saw the title of my paper in print it struck me as being rather pretentious. I then saw that I was in danger of giving the members of this Society the idea that they would be bored with a detailed history of uterine disease; a history having as a starting-point the time when the menstrual function first occurred to Eve, down to the new departure in uterine pathology based upon the latest theory regarding the nature of the catamenia.

At no time have I had any such intention, nor do I propose to occupy your time quoting book authorities on the subject.

I take it for granted that my auditors are familiar with the literature of medicine, and in case any points in the history of Gynæcology shall have escaped you, you can better post yourself by reading, than by listening to anything I can write or read.

Have no fear that I shall torture you with names and dates or theories, ancient or modern. I propose simply to give you what I understand to have been the status of uterine pathology among the ancients, and compare it with the modern or new of about a century ago, and the newest of the present day.

In doing this, the most erroneous conclusions may, perhaps, be drawn from the records at my command. There is here a broad field for the mutilation and misconstruction of facts, and, though I may blunder into taking a one-sided view of the subject, there are those here who, if I fail to do justice, are well qualified to correct all mistakes.

If we are to believe a recent translation in the Berlin collection, we must look to Egypt and her once strangely gifted people, for the first records of a careful study of uterine disease.

Our pride, conceit, and amazement at the wonderful strides the world has made in the past century or so, in this and many other branches, is very much humbled when we think of the excellent work done some four thousand years ago, by the forefathers of a people whom we now despise.

Moses is the first live, acting man who speaks to us from early times. Moses and the creation of the world are inseparably linked together; yet uterine disease seems to have been studied something like a thousand years before *his* birth.

That he, himself, knew something at least, of the hygienic treatment of these diseases, cannot be doubted after a careful study of the various Jewish laws, for which Moses seems to have been, in chief, responsible.

True knowledge, especially that affecting mankind at large, though it may be for a time forgotten, never remains buried in a single nation, but, sooner or later, spreads from man to man, and place to place, shedding its light in all directions.

Although we may be able to trace the broad and sweeping river back through valley and pasture-land, up the hill and down the mountain side until we reach the little spring or springs that gave it birth, we cannot say *why* its course was *thus*, or *so*, or account for all the drops that slowly trickle from its bed to Mother Earth below.

So here, though outlines seem quite straight and plain, the *little* things we cannot trace—small *details* are forever lost.

Galen gets the credit of being among the first to use the vaginal speculum; but "Aetius," says Wright, "describes ulceration of the womb with a precision which leaves little doubt that he, also, employed this instrument for diagnosis."

Even earlier than the day of Aetius were the specula disinterred at Pompeii, their date being something like four centuries before the time of Aetius. But we look to the Alexandrian school for most of all that is valuable on this subject, and although the extensive and valuable library of this school was burned by Omer (A. D. 640), we still have a compendium or encyclopædia of the knowledge and practice of those days in the works of Aetius, who, through practicing in Alexandria, seems to

have devoted most of his time to the task of compilation. That his work was extensive we cannot doubt when we consider the fact that it embraces the whole field of medical knowledge as it existed at that day.

"In the sixteenth book of his work," says Wright, "Aetius treats principally of the diseases of women, devoting to the subject one hundred and twelve chapters, varying in length from a few lines to several pages. Thirty-seven of these chapters treat of pregnancy, of parturition and of suckling. There are six chapters on various kinds of ulcerations of the womb; three on abscesses; two on displacements; two on obstructed and imperforate uterus; seven on growths occurring in the vagina or uterus, and eighteen on menstruation and its disorders.

"He has special chapters for hysteria, fibrous tumors, pelvic abscess, hæmaturia, displacements, etc., and devotes one very long chapter to inflammation of different parts of the uterus and its treatment."

Nor was that especial and important subject, diagnosis, neglected. As we have seen, the speculum was not only known, but carefully and intelligently used. Aetius laid great stress on its use in the various diseases, especially of tubercula (polypi) in the uterine neck, sessile tumors, calculi and hæmorrhoids of the womb.

The digital and bi-manual touch were known, as also the method of making and using the sponge tent.

In the line of treatment, suppositories (then called pessaries), were very commonly in use, Aetius giving formulæ for over one hundred varieties. They are almost identical with the suppositories of the present day; they, however, using beef and deer marrow and goose fat, instead of lard, tallow or cacao-butter. Round pieces of wood smeared with unguents, exactly like those presented to this Society by Dr. Vanderveer, were also in vogue.

The employment of the porte caustique was described, and touching exuberant granulations with verdigris recommended.

In case of imperforate or obstructed uterine canal, they used a tin tube, which, when introduced, maintained the shape of the organ and preserved the calibre of the canal.

Injections, vaginal fumigations, hip and other baths, plain or medicated, the douche, etc., were all described.

It is a strange and incomprehensible fact, that, with such a work as that of Aetius, with centuries of observation and experiment and excellent instruments, the knowledge and usages of that day were lost sight of for something like a thousand years.

After the fall of the Alexandrian school, the professors of the various branches continued to progress, but the study of the diseases of women received a sudden check from the fact that it was relegated to their own

sex. So there came to be but little mention made of these diseases in the writings of the Arabians, and the subject was allowed to drop out of notice. From this time onward to the new era there is little worthy of notice. Albucasius, for the first time, mentions herpes of the uterus and the use of air pessaries in the vagina, and devotes considerable space in his valuable work to this department.

The speculum, spoken of by Aetius, in whose time it seems to have been in general use, dropped out of sight for some ten centuries, and then appeared in the works of Scultetus, he giving an accurate drawing of it. From this date we find it occasionally mentioned in the works of Ambrose Pére and others.

The knowledge of uterine pathology existing at the time of the breaking up of the Alexandrian school was certainly of a high order, and, from what we can learn, the profession bravely held their own from that time up to 1800.

The few original observations made from time to time did not make up for what was lost.

The dawn of modern Gynæcology came at the beginning of the nineteenth century.

Through the labors of Lisfranc and Recamier in France, and Sir Chas. Clark and Gooch in England, began the growth and development of the science and art of Gynæcology.

These able workers in the field revived the almost forgotten lore of the ancients, and, to their honor be it said, picked up the broken threads, added a few new strands, and thus prepared the warp and woof out of which those webs were woven, that are displayed in the works of Thomas, Sims, Peaslee, Chapman, Emmet and Barker—the grandest fabrics of this kind, *by far*, ever presented to the world.

The French devoted most of their time, at first, to the investigation of the diseases of the uterus, and were disposed to look upon the constitutional derangements occurring with these local diseases as secondary to, and dependent on, the uterine lesions. At the same time, the English, while recognizing uterine disease, considered it "a fragment of a constitutional malady."

These new or modern views, brought together and harmonized by the leading men in all nations (who have carefully studied the true relations of constitutional and local disease), have produced the newest, or modern, pathology of the present day.

This pathology recognizes the fact that uterine disease of long standing will derange the general system, while, on the other hand, disordered conditions of the nutritive system will, in time, cause uterine disease.

Regarding inflammatory diseases of the uterus, we are, in this country, greatly indebted to Dr. Henry Bennet, whose work fairly represents uterine disease at the time it was written. According to the views set forth by him, the chief disease of the uterus was inflammation and ulceration of the cervix ; the body of the organ being seldom involved.

He is rather indefinite in describing the character and grade of the inflammation, and we may infer that he considered it a specific disease, rather than a derangement of nutrition, with few anatomical lesions.

This may, in part at least, account for his therapeutics, which consisted in the use of the more destructive agents, by which the disease was blasted as if by fire.

The true nature of these inflammatory affections was soon called in question, and it was found that many of the important factors in that great process were absent in the so-called endo-cervicitis, which was proved to be a derangement of nutrition, characterized by deranged innervation, congestion, hyper-secretion and exaggerated proliferation of the epithelial cells.

The so-called ulceration of the new school has been proved by recent investigations to be, in most cases, only a desquamation of the epithelium.

This led some to deny the existence of inflammation in the non-puerperal uterus ; they calling all diseases, hitherto known as inflammatory, irritability or congestion of the uterus.

While pathologists were wrangling over this bone of contention (the inflammatory or non-inflammatory character of uterine disease), the nature of the bone itself began to be better known. It was observed that many of these diseases were simple derangements of innervation and circulation, with consequent perversion of function, and but little change of structure.

Other conditions, long known as chronic metritis and hypertrophy, have been proved to be change of structure produced by pre-existing disease.

Dislocations of the uterus came in for a large share of attention, and those who devoted their time chiefly to this branch, became so much impressed with its importance as to declare that almost all uterine diseases were caused or kept up by malpositions of the organ.

On the other hand, those who looked upon inflammation as the great source of all pelvic disease, claimed that if the local trouble was cured, displacements would either disappear without care on the part of the physician, or give but little if any trouble if left uncared for.

Through the combined efforts of both parties the real pathological import of the two classes of affections has now been definitely settled.

Coming up to what may be called the most modern, or that which has been developed in our own time—say within the last twenty-five or thirty years—we find that the true pathology of many of the affections of the uterus, hitherto known as inflammatory, have been more clearly described in detail.

It has been found, by improved means of diagnosis, that the cavity of the uterus is often involved in what is known as corporeal endometritis. The nutrition of the mucous membrane is deranged by lesions of innervation and circulation, causing derangements of the menstrual function, and, in time, disturbing the general system.

It has been demonstrated that the endo-metrium is subject to changes of structure, assuming a polypoid condition, known as endometritis polyposa.

This affection, for a long time obscure and annoying to the gynæcologist, is now easily diagnosticated, and yields promptly to treatment. We have all seen cases of menorrhagia that defied our hæmostatic remedies. Relief follows constitutional and local medication, but the bleeding returns again and again.

This point may be illustrated by the history of a case :

Lady, aet. 35, married and has had several children, gives a history of some uterine disease for past six years. Within the last two years her menses have been somewhat irregular, recurring too frequently and continuing too long. For the past nine months she has suffered from marked menorrhagia, being hardly ever more than two weeks free from flow.

Six weeks before the time of my first seeing her she had constant hemorrhage, which so reduced her that she was unable to leave her bed more than a few hours at a time.

She had been treated, off and on, for some three or four years, for uterine disease, by an intelligent member of the profession, who had exhausted all the means at his command for local and constitutional treatment, but without relief, as the history shows.

At my first examination I found the uterus somewhat enlarged, canal of the cervix open, and tolerably free hemorrhage at that time.

A sound detected an irregular condition of the uterine cavity, and by use of the exploring curette, a portion of the proliferation, sufficient to settle the diagnosis, was removed.

The cervix was then dilated sufficiently to admit a blunt curette, with which the entire fungoid growth was removed. Hemorrhage ceased almost immediately, and no inflammatory or constitutional disturbance followed. The patient, as soon as she recovered from her previously anæmic condition, was able to be around.

From then to the present time (about one year) she has menstruated regularly and normally and is in perfect health.

Other cases might be added, showing the prompt relief which follows this method of treatment, and also showing the necessity for a repetition of the operation when the disease recurs, as it sometimes does.

Another case, and only one, might be given, where a slight cellulitis followed the operation, showing the necessity for careful manipulation.

The point which I desire to make is, I think, shown, viz., the great advance made in the management of such cases ; being the more marked when compared with the constitutional treatment of earlier times, and the much more dangerous and by no means satisfactory treatment by uterine injections.

While this may be considered one of the most important steps in the investigation of the pathology and treatment of uterine disease, an equally interesting advance has been made in the investigation of some of the structural changes of the uterus, such as sub-involution from deranged nutrition, and areolar hyperplasia caused by puerperal metritis—the one a curable affection, the other an incurable disease, tending to further degeneration, which may be prevented by judicious management, and the patient saved from the bad constitutional results if the disease is clearly recognized at an early date.

More important still, and, as I believe, the richest contribution to uterine pathology and therapeutics of our own day, is circumscribed areolar hyperplasia, or sclerosis of the cervix uteri.

This affection, the pathology of which has been clearly described by Drs. Thomas, Gallard and others, has been shown to follow, or be caused by laceration of the cervix, an accident which frequently occurs at parturition.

This condition of the cervix, which is observed every day, was formerly described as inflammation and erosion of the mucous membrane, with hypertrophy of the cervix, was treated by all kinds of applications, mild and heroic, but was never cured, unless a pretty thorough destruction of the cervix could be called a cure.

It is true that the acute symptoms or inflammatory condition could be relieved by judicious treatment, but only for a time, for it returned and remained until the menopause, when kind nature did for the patient what the surgeon tried, but failed to accomplish.

To Dr. Emmet, of New York, belongs the credit of demonstrating the effect of this laceration of the cervix, in producing sclerosis of the muscular wall and keeping up a constant inflammatory condition of the mucous membrane, with all the local and constitutional troubles proceeding therefrom.

He, too, was the first to propose and execute the operation for the restoration of the cervix, by which the most prompt and perfect recovery follows, as a rule.

Simply uniting the lacerated walls of the cervix covers in and protects the exposed and irritated mucous membrane, and the alterative effects of the operation changes the character of the tissues and renders them more nearly normal, or at least harmless.

To contrast the treatment of such cases, as it was a few years ago (when the patient was bled, blistered or cauterized for months or years, in order to obtain a little temporary relief), with the prompt relief and perfect cure which follows Dr. Emmet's operation, requiring, even in the worst cases, but a few weeks of preparatory treatment, a comparatively safe operation ; rest for ten to twelve days, and in the great majority of cases, nothing else.

Cases might be related to show the value of this method of treatment, but I proceed at once to the consideration of displacements and deformities.

Up to a few years ago displacements and flexions were classified under the same head. But a more thorough knowledge of pathology has led to a clearer definition of two very distinct classes of affections.

The fact that flexion necessitates a defect of structure, clearly distinguishes that affection from forward and backward dislocations. Consequently the two differ in their causation, pathological anatomy, diagnosis and treatment.

To speak of the pathology and treatment of prolapsus uteri, and the various forms of version, would furnish material enough for a whole evening's discussion, and waste your time, because you are familiar with the subject. But a word or two regarding some of the newest acquisitions in this department may be said.

With the variety of mechanical appliances at our command it may be fairly claimed that all the uncomplicated dislocations are readily curable. I am inclined to think, however, that the difficulties encountered and complained of by the general practitioner lie in the want of skill in the adaptation of mechanical support to each individual case.

In place of endeavoring to find a pessary adapted to all cases, the true basis of action is to be able to select from the great variety of instruments the one best adapted to the case in hand.

Another point which, I believe, is often overlooked, is that in cases of dislocation the pelvic organs and tissues become changed in form, so that it is impossible to at once place the organ in its normal position.

The best that can be done in retroversion, for instance, is to restore the organ and employ an instrument with a slight posterior curve, and

large enough in its antero-posterior diameter to push the posterior vaginal wall back, and below the fundus, thereby elevating the entire organ and exerting its chief pressure posteriorly.

An instrument like this, worn for one or two weeks, will convert a retroversion of the third degree into one of the second or first, and give, in the meantime, relief to the more urgent symptoms.

This instrument, after a time, can be changed for one with a greater posterior curve, sufficient to follow up the advantages gained by the first; until, finally, an instrument can be worn which will retain the organ in its proper place.

The same principle applies in the treatment of anteversion, and also in prolapsus.

It may be well to mention, however, that in treating prolapsus it is always necessary to have a competent perineum as a base upon which to rest all mechanical appliances. I am satisfied from my own observations that all uterine supports or supporters having an extra-vaginal fixed point are intolerable to patients for general use, and that the intra-vaginal pessary is the only reliable support.

Regarding flexions or deformities, it appears, from the records at our command, that little, if anything, was ever accomplished in the way of overcoming the malformation or relieving the distressing effects on the patient. In fact, in the earlier part of this century, and even up to a very few years ago, little progress was made in the management of such cases beyond partially relieving the dysmenorrhœa.

The first therapeutic agent based upon sound principles was the intra-uterine stem, which was employed by Simpson and Valleix, who succeeded in curing many of their cases. But clinical experience has demonstrated that this instrument is always difficult to employ, dangerous to the wearer, and not always satisfactory in its results. On that account it has, to a great extent, fallen into disuse.

Even those who were the first to endorse it and urge its claims on the profession sought other means for the treatment of flexion, such as incision and discision of the cervix.

Dr. J. Marion Sims has been the great exponent of that operation of dividing the cervix for the relief of sterility and dysmenorrhœa due to flexion, but several years of experience and many hundred operations show the important fact that the operation is, after all, but a mutilation of an organ for the purpose of relieving important disturbances arising from a malformation which the surgeon is unable to remedy.

On that ground it appears to me that the operation is rapidly falling into disfavor, or is becoming markedly circumscribed in its application,

while other methods of treatment, more conservative, less dangerous and more satisfactory, are taking its place.

According to Peaslee, in dysmenorrhœa from true stenosis at the point of flexion, relief follows superficial incision at the point of stricture. The details of his method of managing flexion, and the success attendant thereon, are no doubt familiar to you all from his recently published pamphlet on the subject.

Two of the most important points recently developed in the treatment of flexion are, first, the fact that repeatedly adjusting the flexed uterus, and, second, holding it in shape, as described in an article which I published some years ago on uterine deformities. In effecting such retention, the use of Thomas' improved anteflexion pessary is of very great value.

These so modify the nutrition at the point of flexion, as, in many cases, to radically overcome the deformity.

If, then, the adjustment of the organ, the use of Thomas' pessary, and the treatment by incision as described by Peaslee, are combined in the treatment of flexion, satisfactory results will follow in the vast majority of cases. Relief from dysmenorrhœa and other important pelvic symptoms follow in most cases, and, in some, the deformity is permanently overcome. And more than that, there is less danger in this method of treatment, and in extreme cases, where it fails, the patient is not left worse than before the treatment, and that is more than can be said of all other ways of treating flexion.

The success attendant on the management of flexion and dysmenorrhœa is due, doubtless, to the improvement in diagnosis. Some time ago physicians were apt to look upon dysmenorrhœa as due to mechanical conditions, such as occur in flexion. But now it has been clearly pointed out that painful menstruation may be due to *mechanical* causes, such as stricture, flexion or true stenosis; *neurotic*, in which the uterine or ovarian nerves are at fault; *inflammatory*, as in endo-metritis or extra-uterine inflammations, such as pelvic peritonitis.

We might add to this step forward an advantage gained by recent investigation, and that is, the impossibility of curing some cases of uterine disease on account of deranged conditions of the general system, and extra-uterine pelvic affections. This should be borne in mind simply to guard against local treatment, which does harm.

Looking at the uterine therapeutics of the present day, we find it conservative, and this is what characterized the therapeutics of the ancients. Between their time and ours, especially at the beginning of the present century, the treatment was much more heroic and quite destructive of the integrity of the organ.

In much of the treatment of uterine disease in the past, the prominent

idea seems to have been to cure the existing affection at all hazards; to stop the uterine leucorrhœa, arrest the congestion, heal the so-called ulcerations, even though a total annihilation of the mucous membrane was necessary to accomplish the object.

The demands of the present day are that we shall cure uterine disease and restore the organ to its normal condition.

On first thought it might appear that if we accomplished the former, the latter would follow as a consequence. But not so; an uterine leucorrhœa can be promptly arrested by destroying the mucous membrane of the cervix, but the scar tissue left in its place is a worse affection than a simple leucorrhœa.

Complaint has been made that the inflammatory diseases of the mucous membrane of the uterus are difficult to cure, requiring long and tedious treatment, which often discourages the patient and physician before the desired result is obtained.

Now, this is not due to anything peculiar in the nature of uterine diseases, but arises from the fact that the inflammation or hyperæmia, with its attendant derangements of function, are kept up by other conditions, such as: First. Defect in either form or structure, congenital or acquired, of the uterus itself. Second. In dislocations of the organ. Third. By abuse of the sexual apparatus, either by excessive functional taxation, or strict abstinence, compelled by circumstances.

From all this, it follows that the best pathologist and therapeutist is he who most promptly recognizes the presence of such complications, and is prepared to meet them with the proper means for their relief. This requires the expert surgeon and skilled physician.

THE ADIRONDACKS AND "HAY FEVER."

BY R. M. WYCKOFF, M.D.

The one statement which can be most positively made concerning the treatment of "hay fever" (also known as autumnal catarrh, *catarrhus æstivus*, pollen fever) is that drugs have little, if any, uniform curative value, while the climate-cure is almost absolutely certain in its control.

Three climatic situations are known to afford exemption from this affection:

I. A trip to sea. Immunity lasts during the entire period on the

ocean, but ceases so soon as the patient returns to these shores. If he lands on the other side of the Atlantic, the fever may not reappear in the attack of that year. English hay fever subjects coming to this country may, in like manner, be well during their stay here, but are attacked on their return to their native soil. A change of continent, therefore, added to the ocean trip, affords relief to many.

II. Residence on some island or sea-beach that is well shut off from the noxious land-influences by broad salt water inlets and bays. This conformation of land and water has made a good anti-fever reputation for Fire Island, Long Beach, and a few other points along our New Jersey and Long Island coast. Complete exemption is observed at those points only during the prevalence of winds from the ocean, land breezes very promptly awaking the latent energies of the fever.* A certain proportion of the severest forms of the malady report no material relief at these resorts.

III. Removal to some cool mountain region, or, what is to the same purpose, removal to the cold climate of the Marquette and Canadian regions, or even further northward. Probably all the mountain ranges in the eastern half of the United States have been explored by one or more seekers after exemption, and there has thus far invariably been found an altitude, if the mountain be high enough, at which the distressing and depressing disease is balked and can pursue its victim no further. It is not my purpose to mention even by name the various peaks and heights that have been reported as exempt regions, but simply to call emphatic attention to the advantages of the Adirondack region, situated within or near the limits of the proposed great forest preserve, or State Park, and especially to the elevated lake regions of Hamilton County.

The question, frequently asked, "To what is this kindly influence of the north woods due?" is best answered by a confession of ignorance. We know too little of the disease, too little of its causation, and too little of the differences, microscopic particularly, between the mountain air and that of the lower catarrhal zone. I suspect, however, that when the answer shall have been given, it will be found that "cold"—low temperature—has much to do with it: in two ways, probably, first by reason of some soothing influence upon the irritable schneiderian membrane of the fever subject, and secondly by its repressing influence on certain forms of vegetable life. From this it will be seen that I incline to take sides with the pollen theory—some interesting demonstrations of which were given in the *Proceedings* for September, 1876, by

* Ashurst, on Beach Haven, N. J.—*American Journal Medical Sciences*, April, 1877.

Dr. E. J. Marsh, of Paterson—rather than with the neurosis theory of Dr. Beard, set forth in his little monograph on "Hay Fever." I will dismiss this part of the subject by rapidly naming some of the points which are common both to the sea-beach and the mountain-cure. These are the absence of tilled soil, the freedom from dust, from certain forms of lowland plant-life, including their pollens, which, if not wholly absent, are shorn of some of their irritant as well as germinating force, and also the very uniformly low temperature found in both situations mentioned.

The writer of this paper has been subject to the catarrh of autumn since boyhood, from about ten years of age; it has recurred with admirable but annoying regularity, year after year, on the 15th to 18th day of August, continuing with considerable febrile movement, intense catarrhal and moderate asthmatic symptoms, a period of six weeks, and declining about October 1st, gradually with the slow approach of cold weather, or else terminating abruptly with an early frost.

The different plans of medicinal treatment, general and local, which I have used, are of no interest at this time. It is enough to state that the local remedy of Helmholtz—the neutral solution of quinia, was tried; it afforded some temporary benefit, but proved to be without curative efficacy.

In 1874, I made my first tentative excursion to, and went into camp on Raquette Lake. At that time I had no knowledge that any catarrhal subjects had made trial of that atmosphere. The lake I mention is in Hamilton County—altitude 1,760 feet. I went thither in the middle of that year's attack. My stay there was brief, only ten days, but during that time I experienced marked exemption; so also at Blue Mountain Lake, altitude 1,821 feet, situated on the line of easiest access to this part of the Adirondack Lake country. And even on the road up the hills which embosom this romantic region, at an altitude of 1,600 to 1,700 feet above the sea, a progressive degree of improvement was noticed. After leaving the region, however, the relief did not long continue, for within a few hours after reaching the catarrhal district of southern New York the fever returned, and remained until about October 1st, the usual time of its cessation.

Since 1874, for two years, the same excursion to the north woods has been repeated, with results equally gratifying. Immunity from the fever finds, even in that region, one exception, of which a word of caution may be given. I have, on two or three occasions, found that prolonged or excessive muscular exertion, or "overheating," as it is popularly expressed, gives rise to a most suggestive coryza, lasting twenty-four to forty-eight hours. This temporary embarrassment may, I believe, be

entirely avoided by refraining from long marches, hurried portages, and those other forms of hard work which the robust life of the camp, the exhilarating influences of the mountain air, and the keen sense of rugged health stimulate the tourist to undertake.*

Last year, 1876, there were besides the writer, two other hay fever associates in neighboring camps upon the Raquette, severe cases both of them, whose exemption, while in the woods, was as complete as could be desired. These, and many other like experiences, can hardly fail to increase the non-catarrhal reputation of our home resources in the State Park, which appears to many who have visited it a vast, undeveloped sanatorium, worthy the more extended acquaintance of the medical profession.

There are accessible points in the lake country much loftier than those above named; Lake Placid, for example, two thousand feet above the sea. There are, also, the lofty peaks of Mts. Marcy, Seward and others, ranging from three to five thousand feet high, affording a bountiful sliding-scale of altitude suitable to every varying degree of intensity of individual cases; for it is not impossible that the lower levels of 1,700 and 1,800 feet may fail to meet the wants of some of the most intense and inveterate cases. These will seek the higher heights.†

Autumnal catarrh is only one of several affections which experience relief in the air of the "north woods." Of phthisis much has been written in this connection, and more has been claimed and will be allowed by the test of time. Malarial fever, asthma, rheumatism, dyspepsia and a variety of ills, for which physicians desire to prescribe a "change of air and scene," are the affections which are most likely to be favorably impressed by this line of treatment. Others will be added to the list as the resources of that wide and diversified domain are de-

* "The sleep that is dreamless, the keen senses, the Arab vigor that makes exercise a jest, and the mindless work of the camp a simple pleasure, are the reward of the out-door life of the camp."—*Dr. S. Weir Mitchell, on "Camp Cure,"* 1874.

† Concerning the temperature of this region, I have an observation which was kindly furnished by Mr. Verplanck Colvin, the Superintendent of the Adirondack Survey. It was taken at Blue Mountain Lake, August 1st, 1876:

At 7 A. M.	55.5° F.	At 1 P. M.	78° F.
At 8 "	63.5° F.	At 3 "	79° F.
At 9 "	66.5° F.	At 5 "	78.5° F.
At 11 "	78° F.	At 7 "	71.5° F.

Although this single statement has little significance, I give it here as the only observation at my command. The days, even in midsummer, are very seldom hot, and the nights are cool, if not cold. The camp fire is a necessity for almost every evening before "turning in," and all the bed-clothing that can be secured is put into requisition.

veloped. From a remedial point of view, the exploration of this territory has only just begun. That it is wonderfully salubrious is admitted on all hands, but exactly what its merits are has yet to be made known. Every year improves the means of access, doubles the accommodations for tourists and health-seekers, while impairing little of the wild attractions or sanative influences of this wilderness, which Mr. Colvin has said is at once "the wonder and the glory of New York."

It is incorrectly supposed by many that it is necessary to "rough it," and to undergo many privations to secure the benefit of the north woods. It has been so until within a few years past; but now, by choosing localities, accommodations can be obtained which will serve for those who are not robust; invalids, and even delicate women and children, are not an uncommon sight in the regions to which my experience refers. Those having a dread or inaptitude for camp-life can find at various choice points acceptable shelter and table. Those strong enough—and hay fever subjects commonly have a good physique—and not afraid to rough it a little, will find the deprivation of some comforts of ordinary life more than balanced by the recreation, recuperation and novelty of the camp life. The initiation into this kind of life is not difficult. I have recently seen a little book of about one hundred pages, entitled "How to Camp Out; or, Hints for Camping and Walking," (Scribner & Co.,) by Mr. John M. Gould, which answers nearly all the questions that the beginner desires to ask concerning what is best for him to do in the preparation and comfortable execution of a first trip of the kind. The book is wisely, and, at the same time, agreeably written, and possesses a feature of no little value in a chapter by Dr. Elliott Coues, U. S. A., on the hygiene of life in the woods, a subject which, in most camps, is monstrously neglected. The next best thing to camping out is to read a book of this description.

EXTIRPATION OF SUPERIOR MAXILLARY NERVE AND MECKEL'S GANGLION FOR FACIAL NEURALGIA.

BY G. R. FOWLER, M.D.

George W. Meyer, aged fifty-three, applied to me in January, 1877, for relief of a neuralgia of the fifth nerve of eighteen months' duration. The disease began with a slight pricking sensation in the roof of the mouth, left side. In a short time this was succeeded by the most intense pain,

which followed the distribution of the superior maxillary nerve, and after the lapse of several months occasionally affected the inferior dental branch.

From the well known character of the physicians who had been previously in attendance I had little to hope for in the way of medication, feeling fully assured that they had used every remedy likely to be of service to him.

I at once proposed to exsect the nerve, but the proposition was declined, and I set to work to devise measures of relief.

The patient had become emaciated from the effects of this ever-present and intensely agonizing pain. He was unable to attend to his business, and, discouraged with life, he was well nigh at the point of desperation.

I used in succession all the measures likely and unlikely to prove either palliative or curative, including quinia in large doses, and in small doses combined with iron, deep injections of chloroform, and also of carbolic acid, hypodermic injections of morphia, and of atropine, together and separately. Galvanism had been used by a previous attendant, but with no success ; counter-irritation only aggravated the trouble ; croton chloral hydrate gave slight but transient relief.

For days, weeks and months this man walked the floor of his room, the victim of a pain constantly present, but which, in frequent paroxysms of intensity, compelled him to assume all the shapes and figures of a professional contortionist. Nothing but a narcotism dangerous to life itself gave him any immunity from suffering, and this was succeeded generally by an aggravation of the pain.

At last he consented to an operation, and on February 27th I performed a modification of Carnochan's operation for exsection of the superior maxillary nerve, assisted by Drs. Pilcher, Rockwell, Jewett, Hamilton and Leary. Ether being administered, the patient was seated with his back to a window. The incision began at the inner angle of the eye, on a level with the infra-orbital ridge, extending downwards about three-quarters of an inch, then curved outwards and upwards, terminating at a corresponding point opposite the outer angle of the eye. This formed a small semi-circular flap, which, when dissected from the bone and turned upwards, laid bare the anterior wall of the antrum of Highmore, and the infra-orbital foramen. The leash of nerves formed by the division of the superior maxillary after leaving the infra-orbital foramen was now dissected from the under-surface of the flap, and a trephine five-eighths of an inch in diameter applied to the bone, with its crown slightly overlying the infra-orbital foramen, and its point on a line perpendicular to the same. A few turns of the instrument soon

removed the button of bone, and the cavity of the antrum was brought into view. A reflecting mirror fastened upon my forehead lighted up the parts well, and no difficulty was experienced in cautiously breaking down the floor of the orbit with a small three-cornered chisel provided for that purpose.

Following the nerve along the infra-orbital canal, occasionally stopping to suppress the hemorrhage from the infra-orbital artery, I finally reached the posterior wall of the antrum, which I perforated with a one-half inch trephine, thus exposing Meckel's ganglion. Here the hemorrhage from that portion of the internal maxillary artery which is contained in the spheno-maxillary fossa gave rise to some delay, but by patiently waiting and applying small pieces of sponge tied to whalebone the bleeding was controlled, and the operation completed by breaking down and removing Meckel's ganglion and dividing the orbital, spheno-palatine and posterior dental branches, and by means of a pair of small curved scissors dividing the nerve at its point of exit from the cranium through the foramen rotundum.

The hemorrhage having ceased, the parts were well cleansed and the flap brought down to its position and secured by seven silver wire sutures. The operation occupied about an hour.

The patient rallied well, union by first intention occurring except at the point where a ligature which had been applied to the infra-orbital artery passed out from under the flap. The sutures were removed on the sixth day, and the ligature came away on the seventh.

The operation, so far as the relief of the neuralgia depending upon the superior maxillary nerve, was a complete success. The patient's general health still continues to improve, but he occasionally complains of pain along the line of the lower jaw and in the lower teeth. Should this continue I intend to exsect a portion of the inferior dental branch.

PATHOLOGICAL SECTION, MEDICAL SOCIETY, COUNTY OF KINGS.

Annual Meeting, held January 11th, 1877.

The following officers were elected for the current year:

Dr. Rockwell, President; Dr. Mathewson, Vice-President; Dr. Sizer, Secretary and Treasurer; Dr. French, Curator; Dr. Giberson, Editor; Dr. Stuart, Publication Committee; Drs. Segur, Mathewson and Sizer, Committee on Microscopy.

PUERPERAL PERITONITIS, WITH ALBUMINURIA.

Dr. Segur presented a uterus and kidneys, with the following history: S. D., æt. 35, entered St. Peter's Hospital delirious, prostrated and moribund. A meagre history showed that she had been confined eleven days before, and had been very ill. On examination, temperature, 102°; pulse, 120; had a large abdomen, with a hypogastric tumor, slightly painful to pressure. The bladder was evacuated by catheter, and two pints urine obtained, one-third albumen. She failed rapidly; sordes appeared on the teeth, delirium was wild and constant, and in forty-eight hours after her entrance she died. An autopsy, held fifteen hours P. M., presented the following lesions: brain, congested; heart, normal; contained ante-mortem thrombi; lungs, congested, and slightly adherent from old pleurisy, otherwise normal; liver, spleen, pancreas, kidneys, all congested, but otherwise normal; greater omentum adherent inferiorally to parietal peritoneum. Uterus and appendages weighed 28½ oz.; contained intramural fibroid size of hen's egg. Small cystoma in right ovary. The peritoneum presented evidence of diffuse peritonitis, extending as high as the umbilicus; its surface was reddened and studded with flakes of lymph, and more than a pint of purulent fluid was sponged from its cavity.

Dr. Segur remarked that there had been no history of any abdominal pain. From the size and appearance of the kidneys, he should call it the usual form of puerperal albuminuria. She had been given potass. bromide, and had one hypodermic (10 minims of Magendie). She died comatose.

In reference to the interesting specimens from Dr. Segur's case, Dr. Jewett asked if the painlessness of many cases of peritonitis is due to the septicæmia?

Dr. Segur thought this theory might explain it. The history was very meagre; all he knew was that she had had a child, and had been very ill ever since.

Dr. Stuart had seen two epidemics at St. Mary's, where early delirium was common, and pain was by no means a prominent symptom.

Dr. Merritt had had a case where *both* delirium and abdominal pain were entirely absent.

Dr. Sherwell recalled the well-known Vienna epidemic where the same was true.

Dr. Merritt had been able to trace his case to direct infection from the garments of the nurse—a dress which had been infected from a case in the fall, and was not worn from September to December, but was effective as a bearer of contagion when put on again.

MYO-PERICARDITIS.

Dr. Westbrook presented a heart removed from a Danish sailor, æt. 28, who died Jan. 7th, at the College Hospital, four days after entrance, with acute rheumatism. He was cyanotic, had a rapid pulse, and developed rapid œdema of lungs. There was a very distinct double pericardial friction sound till death. Death resulted from cardiac failure. The pericardium was adherent, thrice its normal thickness, with myocarditis in both ventricles. There was no valvular lesion, although the descending aorta was atheromatous.

PLACENTA OF ABORTION.

Dr. L. C. Grey presented placenta about sixth week. The lady had acute rheumatism a year ago, followed by abortion. He had noticed in second week of disease a slight roughening of first sound, but nothing more. Patient has had consecutive menorrhagia. He was called to see her four weeks ago, and found the placenta presented lying in the vagina. He desired to ask: 1st. Is this a normal placenta? And, 2d. Had the previous attack of rheumatism anything to do with this abortion?

LARYNGEAL PHTHISIS.

Dr. Grey also presented a larynx removed from a tuberculous patient whose death was the seventh in the family since last fall. There had been aphonia and dysphagia.

In reply to questions, Dr. Sherwell thought he had seen true laryngeal tuberculosis, although it had been denied.

Dr. Stuart exhibited some very ingenious surgical needles, to be held in an apparatus like a porte-crayon, and made somewhat like Skene's perineal needle.

N. B. SIZER, *Sec'y.*

Meeting, January 25, 1877.

CARDIAC HYPERTROPHY, WITH BRIGHT'S DISEASE.

Dr. Martin presented specimens removed from a patient who had had general œdema, and had died of exhaustion. He had suffered from extensive pulmonary œdema, which had, at one time, almost proved fatal.

The hypertrophy had been made out before death.

His urine was one-eighth to one-fourth albumen, and contained casts. His chief complaint had been of a troublesome cough, and there had been no good history obtained. He had not had gout at all. The œdema lasted over 2½ months in all.

At the autopsy the heart was found to weigh thirty-one ounces. Mitral insufficiency and aortic stenosis were present. Recent pleuritic adhe-

sions were found, although pleurisy had not been made out during life. The kidneys appeared to be in the early stage of cirrhosis.

EPITHELIOMATA OF LIP.

Dr. Rushmore presented two tumors excised at St. Peter's Hospital. Mr. A., æt. 58, was admitted with a tumor which began eighteen months ago as a "lump" of lower lip, left side. He bit it accidentally; it became painful and ulcerated. It was treated, as he said, "by acid," and healed. A similar accident caused it to ulcerate again, and he sought hospital relief. It was removed by a V incision, and there were no glands involved, and no constitutional trouble.

Mr. B., æt. 60, had a "lump" for a year, involving left angle of mouth. It became very painful, and finally sloughed, leaving an opening through cheek. A large mass was removed at operation, involving both lips at left commissure.

Both patients have done well. They were both smokers of short pipes.

The last patient had a sore on his penis forty years ago, and now has enlarged epitrochlear glands, but no other general symptoms. The growth at last was rapid, and the sudden sloughing had excited suspicion of syphilis.

N. B. SIZER, *Secretary.*

Ἀσκληπιὸς *ὁ Σωτὴρ*

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυνάων.

Hymns of Homer, No. XVI.

ITEMS.

——ÆSCULAPIUS is spoken of in the Homeric poems as the "blameless physician," who went about Greece healing diseases and raising the dead to life. This latter exercise of his powers, according to the fable, cost him dearly, since it aroused the ire of Pluto, god of Hades, as likely to diminish the population of the under-world. Pluto carried his complaint to Zeus, who straightway ended the career of the patron of the art of healing by transfixing him with a thunderbolt. As time passed by, Æsculapius was deified and became immortal as the god of Medicine. His frequent emblem in sculpture and the other arts was the serpent, either free or wound around a staff; this is supposed to have symbolized the power of rejuvenescence and longevity. Others say

it expresses the idea of circumspection, vigilance and foresight ; or, in modern phraseology, diagnosis, therapeusis and prognosis. Æsculapius himself may, perchance, have syllabled those very words as he discoursed to his pupils of the wonders of his art.

——New Remedy for Burns and Scalds.—Dr. G. F. Waters, of Boston, recently tested before the meeting of the Massachusetts Dental Society a new remedy for burns and scalds, consisting of the application of bicarbonate of soda, the simple cooking soda used in all families. The doctor dipped a sponge into boiling hot water and squeezed it over his right wrist, the water flowing almost completely around the arm, and nearly encircling it with a severe scald two inches in width. Not content with this, he dipped the sponge a second time, and pressed it closely on the under side of his wrist for thirty seconds. He then applied bicarbonate of soda to the scalded surface, and laid over it a wet cloth, and the intense pain was banished as if by magic. On the next day after this severe test, the scald, with the exception of the part purposely made most severe, was practically healed, only a slight discoloration of the skin showing where the scalding water had flowed—this, too, without a second application of the soda. The flesh on the under side of the wrist had been cooked down to the sweat-glands, and the scald was one which ordinarily would have caused an open and painful wound of long duration. The only treatment of this, however, after the first application of the soda, was to keep the part moist with a wet cloth, and no pain was experienced, and it was but a few days before this severe wound was seen to be rapidly healing.

——"Cod-Liver" Oil.—The somewhat remarkable statement—and certainly discouraging to invalids—is made in a California paper, that there is a firm in San Francisco who purchase the thousands of dogs slaughtered by the pound-master of that city, or that may have been otherwise killed, for which they pay forty cents each. The carcasses are conveyed to their manufactory in San Francisco, where the skins are removed and sold to the tanneries, the hair taken off and resold to plasterers, the hide tanned, and the denuded carcass then boiled in a huge caldron until the flesh separates from the bones. The latter are ground to a fine powder and used to clarify sugar, while the oil that rises to the surface of the boiling mass is skimmed off and made into cod-liver oil for medicinal purposes.

——Justus von Liebig.—"It is an old and familiar metaphor, derived from the most ancient department of practical chemistry, the production of metals, advance in which divides one great epoch of civilization from another, that every man may be looked upon as an alloy of base

and precious metals, that he must be tried and purified in the fires of life and of death, and that the more he has aspired after noble ends in life the more precious will be the residuum that he leaves. Every man who has honestly pursued noble ends leaves behind, as the flame of life expires, a grain, smaller or larger, of precious metal; few only are utterly consumed as dross in the fiery furnace of this life, but the weight of the residue greatly varies. Liebig now lies, as it were, before us on the burning, refining hearth of a ceaselessly active and noble life—a mighty deposit of silver which coming generations may yet gaze on with admiration."

We have here given the closing paragraph of an able and characteristic paper of Pettenkofer on the scientific achievements of Liebig.—*Pop. Science Monthly—Supplement* No. 1.

——Ithaca, the birth-place of Ulysses, presents a puzzling problem to social statisticians. Dr. Schliemann reports concerning it that beggars are unknown, although not one person in fifty can read, and in spite of the fact that the island enjoys 149 annual fête days.

——Dr. C. De Haven Jones, for many years a practitioner in the Eastern District of Brooklyn, died Feb. 24, 1877, at West Port Richmond, Staten Island. He graduated in Medicine in Chicago, in 1860.

——The Board of Health.—The new President of the Board, Dr. Crane, has caused copies of the printed report of the Department, for the years 1873–4, one volume of 140 pages, to be presented to the members of this Society. A vote of thanks was tendered him at the last meeting. The Board will supply copies to all physicians desiring them.

——Medical Quarrels.—The profession of at least four large cities of this country is exercised by local disputes. In consequence of one of these a personal assault by blows was perpetrated; another has led up to a most unprofitable pamphlet warfare—the one course being about as damaging to the participants as the other. So far as their effects are concerned, there is not much to choose between them. The "Code of Ethics" (Art. VI.) has prescribed a wise and temperate plan for the allaying of differences between physicians, which appears to have been entirely overlooked of late. There should be a permanent *court*-medical in every State, which might be called upon to adjudge differences before they become chronic and irremediable.

——Papers for the Medical Society.—The President would be greatly obliged to any members of the Society, who may desire to read papers this coming fall and winter, if they will notify him promptly, so that the programme for the season may be satisfactorily arranged.

——The Artery Constrictor of Dr. Spier, of this city, was recently exhibited to the Clinical Society of London, by Mr. Henry Morris. Mr. M. demonstrated the manner of its operation, and asked for it a trial in the proper class of cases, particularly those in which it is desirable to occlude an artery in its continuity, without leaving a foreign body in the wound. Mr. M. believed the instrument will be found advantageous in the treatment of aneurisms of the aorta, innominate carotid subclavian and axillary arteries.—*Lancet, June 9th.*

——The Sea-Side Home for Children at Coney Island has been in operation since about the middle of June. This year the accommodations have been so far increased, that over one hundred and fifty sick children can be cared for weekly—the weekly average thus far this summer has been one hundred and forty children—a large proportion being nursing infants. The medical officer of the Home is Dr. Jerome Walker, of this city.

——The Dental Engine may be used as a vaccinator. A physician of this city is said to have so employed it; having provided himself with an engine for surgical purposes, the use spoken of above occurred to him, and it has been found to be practically instantaneous in its operation. It is likely to be especially serviceable where large numbers of vaccinations are to be performed.

——Dr. J. H. Raymond has been chosen to the position of Sanitary Superintendent, in the new Board of Health.

——Dr. George Purdy Kissam died July 8th, in his 28th year, in consequence of an attack of diphtheria, contracted while in attendance upon a patient having that disease. The attack ran its course in about a week, inflicting great suffering toward the last. Dr. Kissam was born on Long Island, graduated in Arts from Columbia College in 1871; three years later received his medical degree from the Medical Department of New York University. Since that time he has been in practice in this city, winning rapidly the esteem and confidence of the community. Dr. Kissam leaves a widow and two young children. One of the latter has since died from diphtheria.

——N. Y. State Medical Society.—The next Annual Convention will be held in Albany, January 15th, 1878.

——Drs. Stille and Maisch, of Philadelphia, are reported to be engaged upon a *Dispensatory*, separate and distinct from the work which has been before the professions so many years. A book by two such eminent men will not fail of a generous welcome.

——Hydrophobia.—Dr. John W. Greene, of 70 Union Place, N. Y., is desirous of observing all cases of this disease which may occur in this vicinity. He will take much trouble to get at them, if he is notified by their physicians in attendance. He has two varieties of *woorari*, and would like to have them employed in such cases if agreeable to the practitioners.

——Proceedings for 1876.—Bound copies of Volume I. of the Proceedings can be obtained of Capt. Charters, at the rooms of the Society, for one dollar each.

The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The August meeting will be held on the 21st, at which time there will be presented the following papers:

"Aural Therapeutics," by Dr. J. D. Rushmore.

"The Sandwich Islands as a Resort for Consumptives," by Dr. H. B. White.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1877.

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Vice-President.....C. Jewett, M. D., 310 Gates Av.
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CENSORS.

J. D. Rushmore, M. D., (Senior Censor), G. W. Baker, M. D., R. M. Buell, M. D., J. H. H. Burge, M. D., F. W. Rockwell, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK. (1874 to 1878.)

Drs. J. Byrne, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. L. Zabriskie, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. A. N. Bell, T. P. Corbally, J. Walker, W. E. Griffiths, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, W. E. Griffiths, J. A. Jenkins, Drs. W. G. Russell, N. Matson, F. W. Rockwell, Drs. R. M. Buell, R. W. Wyckoff,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, AUGUST 21, 1877.

AURAL THERAPEUTICS.

BY J. D. RUSHMORE, M.D.

It is said that all movements of reform must pass through the three stages of ridicule, argument and adoption before they can attain success. It is as true of medical reform as of moral, and aural therapeutics may be said to have gone through the same severe ordeal, and is now firmly established on the only groundwork of any science—uniformity; and it is making no indefensible claim, to say that it is as exact in its methods and results as any other department of medical therapeutics. To many this has a boasting sound, and yet I am sure the facts will warrant the statement.

No apology is offered, then, for presenting a few thoughts on the treatment of aural diseases before this Society. The subject is certainly not a trite one, and it deserves, and, indeed, demands at the hands of the general practitioner a more thorough study. Our lack of knowledge on this subject is to be explained, in a measure, by the absence in our medical schools of any special instruction, until within a few years, in the diagnosis and treatment of diseases of the ear, and even in the anatomy of the organ; and in European practice such confusion obtained in aural therapeutics, and such contentions and bickerings occurred among aurists, that, even as late as 1856, it was declared to Van Tröltsch that any one who became an aural surgeon would put his good name in jeopardy.

Aural therapeutics is largely of very recent growth. Although diseases of the ear were treated in the earliest times, yet the treatment was so crude as to make it unworthy the name of a science. The anatomy of the organ was studied carefully, and the progress in this direction has, until within the past twenty or thirty years, been far in advance of the treatment of its diseases. We owe more to Wilde, of Dublin, and Toynbee, of London, than to any other investigators in this interesting field; to the former for his additions to the clinical department of otology, and to the latter for his careful and painstaking studies into the pathological conditions as shown in the dead body; and by these studies our treatment has become more exact and rational.

There are many reasons for urging a more careful study and treatment of ear diseases on the part of the general practitioner, and first of all because they are so often directly connected with general affections that are not treated by the specialist, and in some cases they are essential parts of constitutional disease. In all diseases in which the throat is affected, trouble in the middle ear is likely to be lighted up, from a simple catarrhal pharyngitis, to the graver forms of diphtheria, measles, scarlatina, variola, and, at times, phthisis, typhoid fever, pneumonia, etc. In some of these maladies the ear trouble is not a very frequent consequence, while in others, as scarlatina, it is as much a part of the disease as the renal complication; and I have no doubt the time is coming when the physician in charge of a case of scarlatina will be considered culpable if he does not examine daily, during the first week, at least, the drumhead, as carefully as he examines the urine now during the third week. If you say this can very properly be left to the special skill of the otologist, I reply that it *can*, but in too many cases it isn't left to anybody; and, through what would be considered a gross neglect in the treatment of any other organ, the hearing is impaired, and in some cases total deafness follows, and even death.

Another and very important reason for a more thorough treatment by the general practitioner of diseases of the ear is, that having recognized the connection between general diseases and affections of the ear, and having undertaken their treatment, he should remember that he is dealing with one of the most delicate organs in the body, and one that lies in very close relation, by position, and vascular and nervous supply, with the brain. We will refuse to touch a diseased eye because it is so delicate, and yet we will direct an ear to be syringed or filled with drops when painful, without even looking into it to see where the trouble is. Taken as a class, the danger of death from diseases of the ear is far greater than from diseases of the eye. I can recall a number of deaths from an extension of inflammatory trouble in the middle ear to the brain;

but have not seen a death following disease of the eye, unless it were of a malignant character. One has but to recall the thinness of the roof of the middle ear, amounting, as I have seen in one case, to actual absence of a portion of the superior wall, so that the dura mater was the roof of the cavity, the direct vascular connection between the middle ear and the meninges of the brain, and the close nervous relation between the two, to wonder that meningitis, cerebral abscess, pyæmia, caries and necrosis are not more frequent than they are. There are other reasons for watchfulness in these general diseases, such as the loss of hearing, the chronic, disagreeable, purulent discharge, the cutting off from much pleasure and knowledge that can be imparted alone through the ear, and the necessary dependence upon relatives, friends and the State for support. Important as they are, we can only mention them, without enlarging on them. The single thought that we have been responsible in any way for the curtailment of any fellow being's life, liberty and pursuit of happiness, should awaken in us a more lively interest in the treatment of a much-neglected organ, even though we take no higher ground than the prevention of pauperism, and the unnecessary disbursements of money by the State.

No one need be deterred from treating diseases of the ear on account of the difficulty of acquiring the use of the various instruments in common use for the relief of the affections already mentioned. Any one who can pass a urethral catheter can pass a Eustachian catheter. Any one who can remove a polypus from the uterus can more easily remove an aural polypus. Any one who can scarify the os uteri can scarify the wall of the auditory meatus. Any one who can puncture the bladder can puncture the drum membrane. And who is there, even on the day of graduation, who doesn't consider himself competent to treat the most severe forms of uterine and genito-urinary diseases, and perform any of the described and some undescribed operations on these pelvic viscera? The same care and gentleness and knowledge and judgment are required in dealing with one as with the other; and it is a lack of knowledge of what may be done, rather than modesty, that deters us from making the effort. There is certainly no intention on the part of the writer to belittle the importance of aural therapeutics, nor the difficulty of attaining the requisite skill for the treatment of aural disease; but simply to insist that any one who has the ability to undertake the management of a case of uterine disease, need not hesitate when a diseased ear calls on him for treatment.

Can there, then, be anything done for the prevention and cure of aural disease? Even though we grant the importance to life and hearing of these affections and their connection with general diseases, will

our efforts avail anything, and will not the disease progress, slowly or rapidly, either to a cure or into a chronic and comparatively hopeless stage, in spite of any efforts we may make in their control? We never should ask this question, if we had not all around us such an army of cases of chronic aural affections, especially of the middle ear, brought about in part by our advice of non-interference and inefficient treatment, and partly by the patient's neglect to have anything done during the early stage of the affection, when the disease is most manageable. While we never shall be rid of a large number of chronic cases of the ear disease, they are diminishing in numbers relatively, and are the rear ranks and stragglers of a departing army; the new recruits are younger and more easily trained. Every year the laity are learning more thoroughly the lesson of aural therapeutics—early treatment.

In learning what we *can* do for aural disease, we have also learned the important lesson of what we can not do. A patient presented himself at the Brooklyn Eye and Ear Hospital several weeks since, with a history of gradual loss of hearing of forty years' duration; he could hear only a very loud voice placed very close to his ear. He asked soberly the question: "Do you think you can cure me?" There is a grim humor about such a question, and such cases are not uncommon. The best that can be done for such a patient is to give him an ear trumpet, and send him out to wrestle with the world as best he can. The important truth with reference to cases of this kind, is that the disease had an early stage, and what is now hopeless might have been prevented forty years ago. This is a type of a large class of chronic cases of middle ear trouble. There are some other affections of the ear that are incurable—for example, the deafness that follows cerebro-spinal meningitis—and it is really a waste of time and money to go through the round of blisters, nux vomica, mercury, iodide of potassium and electricty for their relief. There are sufficient instances of acute and chronic affections of the ear for which no treatment, thus far instituted, has proved of any material benefit.

It is during the acute stage of aural disease, then, that we can hope to do our best work; and the treatment is not an expectant one, but one of very active and persistent interference. A faithful effort in this stage will often reward us with a restoration of the function of the ear, avoid the so often hopeless chronic state, and, as in chronic suppurative inflammation of the middle ear, the danger of an acute exacerbation of the disease; for in this common affection the danger is not so much from the acute becoming chronic as from the chronic becoming acute. To speak of the dangers connected with otorrhœa, may seem to many like an effort to magnify the importance of a disease which is treated as a matter of no great moment, but simply one of a disagreeable nature;

and yet it is more frequently followed by danger and death than any other affection of the ear, by extension, already suggested, to important and vital neighboring tissues. Let me illustrate by a case. A boy was brought to the hospital about three months ago with a previously existing otorrhœa or chronic suppuration from his right middle ear of several years' standing. He presented himself for treatment on account of agonizing pain over the mastoid process; he was pale, emaciated, suffered from nausea and vomiting, intense pain in head, dizziness, irregular chills and sweating; pulse of 115; temperature running from 99½° to 102°, and great tenderness over the liver. All the symptoms indicated absorption of pus. I made a long free incision over the mastoid, and although no pus was evacuated, and very little hemorrhage followed the incision, the relief from pain was immediate, and instead of passing a wakeful and restless night, he slept well and recovered from the immediate danger. I mention this case to show the effect of very active treatment, and to recommend especially Wilde's incision over the mastoid in persistent pain in the ear, whether there be a purulent collection or not. The ordinary treatment of otorrhœa, it is hardly necessary to say, would have afforded little or no relief, and would have prolonged the patient's sufferings indefinitely.

In some of the acute affections of the ear, the results of treatment are exceedingly gratifying, both to the patient and doctor. In cases of tubal catarrh in children with sunken drumheads, great diminution of hearing, when, through a swollen condition of the mouth of the Eustachian tube, there is not a free entrance of air into the middle ear, a single blast from a Politzer's air-bag is often enough to restore the hearing to a normal condition, and simply requires intelligent and well-directed after treatment to make the restoration permanent. Acute inflammation of the middle ear offers abundant opportunity for successful therapeutics. The hot douche nowhere gives more prompt though temporary relief from pain. The pain of pleurisy is not more promptly and permanently relieved by leeches than is the otalgia of inflammation of the middle ear. If effusion has already taken place, whether serous or purulent, an early paracentesis of the membrana tympani lessens tension, evacuates the fluid, partially restores the hearing, and over this through an artificial opening which heals more readily than if made by nature, and leaves the membrane intact in many cases where otherwise a larger or smaller opening would have been made by nature, and the hearing more or less impaired. Incision of the walls of the meatus, in cases of furuncle, lessens pain, as the incision of a felon. Plastic operations on the ear, as in cases of tumors of the lobule from wearing earrings, results in a shapely auricle, which accommodates itself to loss of tissue as readily as the

tissues of the face. Eczema of the auricle is as manageable as eczema in other parts of the body, and chronic external otitis is as unmanageable as other chronic inflammations. Syphilis of the ear is of course treated mainly by constitutional remedies, and the ear trouble can be as successfully treated as when secondary manifestations occur in other parts of the body. These more common affections of the ear are mentioned, to show that in their treatment no skill is required that is not possessed by or at the command of the general practitioner. The operative interference for the relief of obstructed Eustachian tubes, trephining the mastoid, operations on adhesions between the drum membrane and inner wall of the middle ear, cutting the tensor tympani for the cure of tinnitus aurium, removal of exostosis, etc., will always require special skill for their performance; and I therefore simply mention them as of very great interest to the otologist, but not resorted to in the treatment of aural disease dependent directly on general diseases.

It has been a matter of much interest to look over the annual reports of the Brooklyn Eye and Ear Hospital for the past eight years, to see if the truth of the general statements already made can be substantiated; and I have been surprised at some conclusions that are forced upon me by these reports. I cannot perhaps close these remarks more appropriately than by stating a few facts that are deducible from a perusal of these reports. In the first place, the number of cases treated has increased from 380 the first year, 1868, to 999, 1876. The laity, then, certainly think they ought to try the effect of treatment. It has been an impression that the number of polypi has been diminishing. A reference to the reports confirms the truth of this. During the first year no polypi were treated; during the second year 19 were recorded; during the third year, 12; fourth year, 15; fifth year, 10; sixth year, 10; seventh year, 8; eighth year, 9; ninth year, 6.

There are two important deductions to be drawn from this brief list: first, 19 patients thought, in 1870, that they could have something done for their relief who had no such intention or belief in 1869; and secondly, while the whole number of patients is very much larger than in the earlier years of the hospital, the number of polypi is reduced from 19 to 6, which means simply that the patients have come under treatment in an earlier stage of the disease for the past four years than they did during the four years preceding.

There has been no material reduction in the relative number of cases of chronic aural catarrh and chronic suppurative inflammation of the middle ear. They constitute still about fifty-eight per cent. of the whole number of cases treated. The most striking fact, however, is the relatively large number of acute cases that have presented themselves for treat-

ment, running from 7 during the first year to 144 in 1876, and bearing the relation to the chronic cases [these refer only to middle ear diseases] of (about) 1 to 29, 1 to 7, 1 to 6, 1 to 5, 1 to 5, 1 to 3, 1 to 3. I was certainly not prepared for this unavoidable conclusion, that while in 1868 for every case of acute disease of the middle ear we saw 29 of chronic disease, in 1876 we saw only 3 cases of chronic disease of the middle ear for 1 of acute disease. This is a very gratifying change, and is due to an increase in the number of acute cases, and not to any falling off in the number of chronic cases.

I have also examined the cases of acute inflammation of the middle ear that have presented themselves for treatment before and after perforation of the membrana tympani has taken place. In 1869 only 7 acute cases are reported, no distinction being made as regards perforation of the drumhead; in 1870 there were 61 acute cases—8 before and 53 after perforation; in 1871, 50—14 before and 36 after; in 1872, 54—18 before and 36 after; in 1873, 58—28 before and 30 after; in 1874, 84—42 before and 42 after; in 1875, 124—48 before and 76 after; in 1876, 144—71 before and 73 after. This table must vary from year to year, inasmuch as the perforation occurs suddenly, and it is the chance of an hour sometimes whether it is seen before or after the opening has taken place. On the whole, however, the number is increasing of those who come for treatment before the rupture of the drumhead.

It might be of some interest to carry these comparisons further; but I fear the reading of any additional figures would prove wearisome, if those already recited have not done so. I have chosen these middle ear troubles partly on account of their numbers and partly on account of their general interest. The conclusions are not forced by manipulation, but force themselves upon us. They are in some respects contrary to impressions received without a study of the figures, and encourage us to continue in a work of so much importance and interest.

The object of these remarks is to claim for the ear more conscientious attention, if we give it any; to urge on the general practitioner the importance of early and active treatment of its disease, and an appreciation of the danger that may follow neglect. As remedial measures fail at times in other diseases, so they will in affections of the ear. We cannot always restore the hearing nor prevent a rupture of the drumhead by effused fluid, nor always relieve pain nor prevent caries and necrosis; and these occasional failures confirm the resemblance between aural and general therapeutics. For Goethe makes Faust say what is true of them both: "The spirit of medicine is easily understood. We study first the great world, or nature, and then the little world, or man, in order at last to let things go as God pleases."

CASE OF TRAUMATIC TETANUS—RECOVERY.

BY G. A. EVANS, M.D.

Mr. Jenkins, aged thirty-five, born in England, married, machinist by occupation, well developed, and has always enjoyed good health.

On Aug. 7th, 1876, while adjusting some heavy machinery, he accidentally received a deep puncture in the outer side of the middle third of his right leg, from a shaft of steel which tapered abruptly and irregularly to a point. Its extraction by a fellow-workman was followed by a protrusion of fat and muscle, together with profuse hemorrhage.

Aug. 23d: Patient consulted me about pain in his epigastrium, stiffness of the muscles of mastication and deglutition, and general lassitude. I ordered him to take two scruples of the bromide of potassium every hour for eight doses, and applied about twenty small blisters along his spine with cantharidal collodion.

Aug. 26th: Called to see patient, accompanied by Dr. J. H. Hunt. The wound was in good granulating condition, general muscular rigidity had permanently established itself, clonic spasms occasionally occur, the pharyngeal and respiratory muscles are but slightly affected, intellect clear, patient rational and very cheerful. I ordered him to take twenty-two minim doses of the tincture of cannabis indica every hour (equal to one grain of the purified extract).

Aug. 27th: No change in his condition.

Aug. 28th: Patient the same; dose of cannabis indica increased to thirty minims.

Aug. 29th: Patient's condition remains unchanged. Up to this date he has been able to get an occasional nap.

The appetite has remained good, notwithstanding his inability to take other than liquid food, and through a tube. He knows the gravity of his situation, but feels confident of recovery. I discontinued giving him cannabis indica, and decided to try the nitrite of amyl, which I ordered to be taken on sugar in five minim doses every three hours until my return.

Aug. 30th: I was informed that "after he had taken the first dose, clonic spasms, which, up to this time, had occasioned comparatively no discomfort, developed to an alarming extent." Tonic rigidity has become more marked, the characteristic sardonic expression has appeared to a noticeable degree, the ability to sleep has disappeared, and his previous

good appetite has given way to a distressing nausea. Considering this affection among the opprobria of medical art, I determined to give the nitrite of amyl still further trial. Accordingly I ordered ten minims to be given every third hour.

I saw the patient again in the evening, and finding him rapidly sinking, I gave an experimental dose of twenty minims of the nitrite of amyl on sugar, as a last trial, for the exposure of its much-vaunted efficacy in this affection, and watched for the result.

As far as this case was concerned, the drug not only proved itself useless to benefit, but demonstrated its ability to hasten a fatal termination by its increasing tonic and clonic contractions, both in force and frequency. Opisthotonos disappeared, only to give place to emprosthotonos. So violent were the paroxysms, that it was impossible to confine him to any given part of the room. Vomiting and the involuntary passage of fæcal matter contributed to his general torment; spasmodic respiration occasioned a marked degree of cyanosis of the face and neck. The relation between cause and effect was so apparent to the relatives, that they protested against my further using the drug. I abandoned its further administration, convinced that I had taken away my patient's chances (slight as I considered them) of recovery. The tincture cannabis indica was ordered to be given him in thirty minim doses every hour.

Aug. 31st: Patient improved in every respect. He has had seven hours' unbroken sleep, the appetite has returned, opisthotonos and emprosthotonos have almost entirely disappeared, clonic spasms still persist, but are less in force and frequency. Tincture cannabis indica, forty minims every hour.

Sept. 1st: Improvement continues.

Sept. 2d: Tetanic spasms increasing in force and frequency, opisthotonos again developing, appetite disappearing; patient has had no sleep since yesterday An examination of the bottle in which the medicine was kept revealed "that the cannabis indica had precipitated on its sides." A fresh supply was ordered.

Sept. 3d: Patient still continues to grow worse. Every muscle seems to be affected with clonic spasms; general tonic rigidity has endured since the beginning, but does not disturb him except in mastication, deglutition and respiration; he has had no sleep since day before yesterday, and has eaten nothing. Another examination of the medicine proved that the cannabis indica had again precipitated from the syrup with which it had been prescribed. The pure tincture was ordered to be given in forty minim doses every hour.

Sept. 3d, evening: Appetite has returned, patient takes food ravenously; he has had two hours' sleep and is quite cheerful; otherwise his

condition is much the same as it was this morning. Dose of tincture cannabis indica increased to sixty-six minims every hour.

Sept. 4th: Appetite good, patient cheerful; has had three hours' sleep; clonic spasms still continue, but not so severe. Tincture cannabis indica, eighty-eight minims every hour.

Sept. 4th, evening: Dr. H. F. Williams called with me. Clonic spasms much less in force than they were this morning, appetite good, patient cheerful; has had four hours' sleep. Tincture cannabis indica, ninety minims every hour.

Sept. 5th: Contractions, tonic and clonic, much milder, appetite ravenous; slept six hours. Tincture cannabis indica, one hundred minims every hour.

Sept. 6th: Improvement continues. The muscles of respiration cease to be affected. Patient is able to move his legs without provoking spasms. Tintcure cannabis indica, one hundred and twenty-two minims every hour.

Sept. 7th: Improved in every respect. Patient is acting very silly this morning, and is inclined to be witty at his own expense. Tincture cannabis indica was ordered to be taken in one hundred and thirty-two minim doses every hour (equal to 6 grs. of purified solid extract), in order to produce, if possible, that dreamy ecstasy so often described in the text-books.

Sept. 8th: Patient complains of nothing except the inability to satisfy his appetite. His principal occupation since I saw him yesterday has been to tell silly and extravagant stories about himself. Tonic rigidity is present to a slight extent only, clonic spasms have disappeared. Tincture cannabis indica, sixty minims every hour.

Sept. 9th: During the night patient experienced some severe clonic spasms of the muscles of the back. The nurse on her own responsibility increased the dose of the tincture to ninety minims, after which the spasms ceased to occur.

Sept. 11th: Patient sitting up. The wound has entirely healed by granulation. The tincture cannabis indica was given in ninety minim doses for a few days, when it was discontinued altogether.

Sept. 20th: Patient called to see me at my office. On examination, I found he possessed a direct inguinal hernia on each side, which he says were produced by the spasms, and I have no doubt that they were.

The variations in pulse and temperature were so slight, that I have omitted their record.

I had no intention (as the title of this paper indicates) to write other than a short history of a case of traumatic tetanus, which in private practice fell to me to treat. Before closing, however, I wish to mention a few points which occurred to me in connection with the case.

The period of time, between the date of injury and the appearance of tetanus, was unusually long. The experience of the profession with respect to this point is, I believe, that a favorable prognosis *may* be expected.

The cannabis indica assisted the patient by producing and continuing a good appetite, a cheerful frame of mind, and by its influence to a certain extent over the muscular system—a relaxation of the contracted muscles sufficient to enable the patient to sleep.

The quantity of cannabis indica administered was large; and the fact that improvement was manifest upon at least three occasions when the dose had been largely increased, would seem to show that the system becomes in this affection rapidly habituated to its presence.

Dr. Schenck recently treated a case of traumatic tetanus at the Flatbush Hospital with the tincture of cannabis indica. Eighty minims of this preparation was given every half hour (equal to almost four grains of the purified solid extract). The patient made a rapid recovery. His experience with nitrite of amyl has been somewhat similar to my own.

The affection is purely functional, and to my mind it consists of a protracted exaggerated reflex excitability. This explanation of its pathology would seem to be warranted by the fact that the affection endures until the wound has cicatrized.

DISCUSSION.

——Dr. H. B. White.—It is gratifying to find a case of this disease recover under a treatment systematically followed. Tetanus is generally considered incurable. In army practice I saw many cases of the traumatic variety, and but one case recovered. Cannabis indica was used in some of these cases; chloroform also. Amputation was frequently tried. I did it myself six or eight times without avail. Sometimes it was done very early; but the progress of the disease was just the same. In the reports of the Surgeon-General's office about 400 cases are given; 27 recovered. Of these, 23 were "mild" cases; of the four very severe cases which recovered, opium and stimulants were used in two, amputation was done in two cases. By these reports we observe that tetanus is not especially frequent in military surgery; only about two in every 1,000 cases of wounds developed this disease.

——Dr. Heber Smith.—At the Charity Hospital at New Orleans I had occasion to observe seven or eight cases of tetanus—not an uncommon disease in that section. They all died save one—the last case of the series—and that was treated by cannabis indica, five or six grains of the extract, *pro re nata*. This was known to be a decidedly active specimen of the drug, by reason of its effects on other persons. The cure

in this case was attributed, without hesitation, to the influence of cannabis; it was the only case of the series treated in that way.

——Dr. E. R. Squibb spoke of the uncertainty of different preparations of cannabis. There is no drug which exhibits a greater want of uniformity. The resin, to be efficient, must be procured from the green heads and seeds alone of the hemp; that taken from the ripe plant is wholly inert. The proportion of unripe, and therefore suitable, hemp which reaches this country is about one-tenth of the whole quantity imported, nine parts in ten being ripe and brown in color. Great care is required by the buyer in the selection of this article. The hemp plant of no other country but India yields the active resin—if we except a little which is cultivated in Kentucky; the resin from this latter source is potent, but a somewhat larger dose is required. * * * It is difficult to understand how a good tincture could be given in safety in two drachm doses every hour. * * * There appears to be a larger proportion of cases recovering from tetanus at the present time than was formerly the case. In some parts of Long Island where cases of tetanus have been frequent for many years the fatality is not now so inevitable as it has been; recovery is not uncommon. Either the severity of type of disease has diminished, or the means of treatment have improved; probably both causes have been at work. * * * Dr. Squibb once had a very severe case recover; the treatment was by opium alone, with evacuants. From the reported cures of hydrophobia by woorari, and from the similarity of the two diseases, the trial of this drug in tetanus would be appropriate. The paralysis of the muscular system—the point that is aimed at in treatment—can be brought about in no way so thoroughly as by woorari.

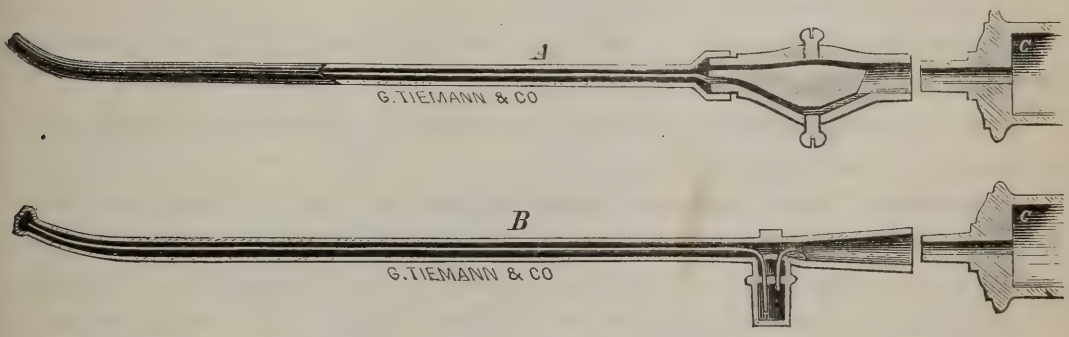
Other members, Drs. Hutchins, Giberson, Burge, Rushmore, De Bowes and Segur, took part in the discussion. Mention was made of cases believed to have been cured by alcohol, chloral and calabar bean. Our limited space compels us to omit many remarks of interest concerning the pathology and treatment of tetanus.

NEW ATOMIZERS FOR MEDICATING THE SUPERIOR AIR-PASSAGES, VAGINA AND UTERUS, AND THE EUSTACHIAN TUBES AND MIDDLE EAR.

BY W. H. BENNETT, M.D.

I beg to present to the Society two new atomizers, which are represented in the following cut. They are made of hard rubber, with an

inner tube of platinum or silver. A is an instrument for spraying the Eustachian tube and middle ear, B is for spraying the cavity of the uterus and the vaginal walls. Both are modifications of and improvements on somewhat similar instruments published in the *Medical Record* for September 15th, 1874, and which were designed for spraying the superior air-passages. The latter were not detachable from the syringe; and in drawing out the piston, more or less of the solution within the reservoir would be sucked up into the barrel of the syringe, and then discharged from the end of the spray tube in drops or jets, rather than as sprays. For this reason those instruments did not give entire satisfaction, and moreover, it was found troublesome to thoroughly wash them out after they had been used.



The instruments here represented are detached from the syringe (which is used instead of Richardson's rubber ball apparatus for producing the current of air). The one designed for medicating the uterus and vagina has a cup or reservoir for holding the solution to be applied. The Eustachian catheter requires no reservoir, as it is never desired to use more than a drop or two of any solution at a time, and this is added after the catheter is introduced.

To use the uterine instrument, it is convenient to first introduce the vaginal speculum, then, the reservoir having been filled and screwed on, and the nozzle of the syringe, *with the piston drawn out*, firmly inserted into the larger end of the spray-tube, the tapering curved end is passed into the cavity of the uterus up to the fundus and withdrawn about an inch, when the piston of the syringe is pushed home forcibly and quickly; a very fine spray is discharged, coating the entire endometrium, and, whatever the strength of the solution used, the irritation will not equal that produced by the application of the same by any other means. If it is wished to spray the vagina, the speculum should be withdrawn slightly and the spray showered upon the exposed mucous membrane, the process, of course, to be repeated until the vulva is reached. Very strong solutions may be used, while very little irritation is produced; and

when the speculum has cleared the vagina, there is no dribbling or oozing to stain the patient's clothes or soil the practitioner's hands.

In using the catheter, a little water must first be blown through it before it is introduced; for, as only a drop or so of any solution may be thrown into the ear with safety, this minute quantity is apt to stick to the inside of the instrument, and does not flow freely unless the latter has been previously wet. A stronger solution may be used than when the ordinary catheter is employed to conduct it.

It is well to have several of these atomizers, as the curves cannot be altered without danger of spoiling the instruments.

After using an instrument it must be thoroughly washed out, and to do this the cup or reservoir must be unscrewed, and several syringefuls of water forced through the tube.

The syringe must *always be detached from the spray-tube before the piston is withdrawn preparatory to producing a shower of spray*—otherwise the caustic solution would be sucked up into the syringe, and discharged as a small stream or in drops.

I use similar instruments to those described, but with different curves, to spray the larynx, posterior nares and pharynx, and I have sprayed the female bladder. The larynx and trachea may be sprayed without irritating the fauces or pharynx in the least, by passing a curved tube down, by the aid of the laryngeal mirror, until just over the vocal cords, and sending in a shower of spray when the patient takes an inspiration. The posterior nares, and superior pharyngeal space or vault of the pharynx, are best sprayed by means of a straight tube passed through the anterior nares.

PATHOLOGICAL SECTION MEDICAL SOCIETY COUNTY OF KINGS.

Regular Meeting, Feb. 8th, 1877.

The President, Dr. Rockwell, in the Chair. Dr. H. F. Williams presented specimens with the following history:

PERTUSSIS AND INTRA-CRANIAL THROMBOSIS.

L. C., æt. 4, was first seen Jan. 19th, 1877. The patient had, on Dec. 17th, 1876, fallen from her sister's lap, while in a low rocking-chair, and struck the back of her head on the floor. She cried at first, but nothing unusual followed, and she went to bed as usual a few hours after, apparently in her normal health. Nothing abnormal was noticed till about a week after, when she vomited while at lunch, and continued to do so at intervals for a few days. Two weeks later she had another fall from her bed in the night, again striking on the head.

She cried very little, and when lifted into bed went quietly to sleep, awaking in the morning apparently well.

Nothing unusual occurred until Tuesday, Jan. 16th, 1877, three weeks after the last fall, when she said, "My head aches," and indicated the frontal region.

The usual domestic remedies, including a cathartic, having proved unavailing, Dr. W. was called on Jan. 19th.

Status præsens.—P. 86, strong, regular. T. 99°, R. normal. Complains of frontal pain, but does not scream as if in *acute* pain. Pupils are normal in size and promptly respond to light. She has not slept for three days. There are no external evidences of congestion.

The case was considered one of catarrhal inflammation of the frontal sinuses, and treated by pot. brom. gr. 2½ q. 2 h. and cold to the head.

Jan. 20th: No change and no relief. To continue cold locally, and Dover's powder 2 gr. q. 2 h.

Jan. 21st: Child slept last night, but pain recurred with the morning. Child is taking milk and chicken broth.

Jan. 23d: Dr. Cooper saw her in consultation. P. 82, rhythm much interrupted, weak, compressible. T. 99°.5, R. 24. Pupils sluggish. Sensorium not markedly affected, yet there is an indisposition to answer questions. Protrudes tongue when asked, but does not return it until told, or assisted to do so.

Dr. Cooper advised Croton chloral, 2½ grains every 4 hours, together with ice to head.

Jan. 24th: The chloral has quieted the patient, but relief ends with the action of the drug.

To-day some external venous congestion appeared about the frontal and temporal regions.

Pulse is very slow, 56, and extremely irregular. T. 98° 5′.

Respiration is sighing.

Ordered leeches applied to both temples, and vesicating collodion to nucha. To continue chloral.

The leeches produced an immediate good effect, the child being very much soothed by the bleeding.

Jan. 25th: Four severe convulsions to-day. Collodion has raised a large blister.

Slept quietly this night, asking once for food. P. to-day is 130. T. normal.

Her intelligence is failing, and she does not readily protrude her tongue. Pupils dilated widely.

Does not complain of pain, yet is constantly placing her hand on her forehead, and occasionally moaning. She has never had anything resembling the hydrocephalic cry.

Jan. 28th: Two convulsions to-day.

Great venous congestion of scalp.

Pupils as before—insensible to light. Very weak.

Feb. 6th: Gradual failure to this date, when she died quietly of exhaustion.

Autopsy, 13 hours P. M., in the presence of Drs. Cooper, Rockwell and Evans.

Rigor mortis present. Body emaciated.

Dura mater deeply congested, and immediately under it two or three ounces of effused venous blood.

The superior longitudinal sinus contained a thrombus about four inches long.

Ventricles partially filled with bloody serum. Puncta vasculosa very distinct, and the whole brain in a condition of extreme active congestion.

Left lung normal.

Right collapsed in spots, at other points emphysematous, and contains a few cheesy nodules.

Two years ago she was treated by Dr. Cooper for a severe abscess of the scalp, which burrowed deeply; whether septicæmic or not cannot be determined.

In the autumn of 1876 Dr. Williams treated her for pertussis in company with several of her sisters. The father says she had just recovered from the cough a few days previous to the fall.

The lungs would indicate the recent recovery.

The President called attention to the fact that pertussis is considered to be often the cause of cerebral thrombus, from the intense venous engorgement during the paroxysms. The clot found at the autopsy was evidently an old one. He considered the pathological chain to be: thrombus, congestion, extravasation, compression and death.

Dr. Wight had seen a case in a child thirteen months old, where a fall from a third story window had produced a depressed fracture across the R. lateral sinus, followed by unconsciousness for many weeks, and left hemiplegia. The child is doing well, and regaining use of limbs.

REPORT OF MICROSCOPICAL COMMITTEE.

Dr. Rushmore's Tumors of Lip (Aug. No.) are Epithelioma, modified by a small, round-celled infiltration.

Dr. Gray's Placenta seems entirely normal. (Aug. No.)

Meeting of February 22d, 1877.

The President in the Chair.

Dr. Giberson presented the ascending and transverse colon with vermiform appendix, from a patient who died of ACUTE PERITONITIS.

HISTORY.—C. L., æt. 48, lawyer, stout and plethoric, of sedentary habits, subject of hæmorrhoids for many years; very constipated, never having had for twelve or fifteen years an evacuation without cathartic medicine. During past three years has taken comp. liquorice powder daily; inclined to dyspepsia; of nervous temperament, disposed to depression of spirits, suffering occasionally from muscular rheumatism, but, upon the whole, could be considered a healthy man. Used alcohol and tobacco moderately. For two months preceding illness had each morning a rather violent paroxysm of gagging cough. The morning of attack it was more prolonged than usual, yet he took breakfast with more relish, and went to his office feeling unusually well. Had had two evacuations during night and early morning. About 10 A.M., February 7th, 1877, in his office, suddenly felt sharp pain in lower abdomen, rapidly increasing to great severity. It was a constant pain, but with spasms of greater intensity. He lay down in private office, and growing worse, sent for me. As I was from home he walked to my office, a few squares only, where I found him 1 P. M. He complained of severe pains through abdomen, and entirely below umbilicus, different from anything ever felt before. Gave him a full dose of cholera mixture (chloroform, opium, camphor, etc.), had him lie down to be covered, as he was inclined to be chilly. After a second dose, about fifteen minutes after the first, he began to feel better, and went home in the street car. Had no nausea or vomiting. Soon after his arrival home, whilst in bed (3 P.M.), he had a sharp chill, followed by fever and sweating, with increase of abdominal pain below umbilicus.

10 P.M.: Pulse 108, T. 103. Pain constant, but with severe paroxysms. Gave him morphine hypodermically, ⅓ gr., which was speedily followed by comfort. He was never sufficiently tolerant of opium by the stomach to get much benefit from that method of administration. Throughout this illness he was given morphine subcutaneously three, four or five times a day, in doses varying from ¼ to ½ gr., or sufficient to control the pain, procure sleep, and keep the respiration below 15 per minute. Hot poultices were kept applied to the lower abdomen. The pulse and temperature rose gradually until the evening of the second day, forty hours after attack, when they were, respectively, 125 and 104°.2. He had a second rigor, followed by fever and sweating, on afternoon of the second day, or twenty-four hours after the first paroxysm. On the second day he was greatly annoyed by hiccough, which seemed to be checked finally by a few drops of sulphuric ether swallowed on sugar. On the afternoon of the second day, thirty hours after attack began, I found decided tenderness over the cæcum, with moderate tympanites and some delirium. The latter (i. e., the deli-

rium) lasted but a few hours, and did not recur during sickness. Also observed at this time a limited amount of dullness in right inguinal region. These facts led to the diagnosis of local peritonitis, and a very guarded prognosis. Stomach rejected everything like food.

Morning of third day, 48 hours from commencement, the pulse had fallen to 112, and temperature to 102°. From this time both declined somewhat, though the pulse varied between 96 and 120, but always regular. Temperature was normal (under tongue) at noon of fourth day (or 75 hours after attack began). From this time it remained below and 100, even fell below normal—to 97°—at one time.

The stomach was irritable throughout, the paroxysms of hiccough being succeeded on third day by vomiting without nausea, a sort of regurgitation of its contents. The simplest food was not tolerated, but brandy and ice-water would sometimes be retained several hours, as many even as 18 hours on one occasion. Morphine, subcutaneously, seemed to quiet stomach best. Nutritive enemata were relied on, and they were well retained and absorbed.

Tympanites, considerable on the second day, increased to an alarming degree, seemingly interfering with respiration. To relieve this, on the eighth day, punctured abdominal wall, just above and to the left of umbilicus, with small hollow needle of the aspirator, letting off large volume of inodorous gas. This puncture involved the small intestine, as some of its contents came through the needle. I think, however, this occurred from the gut being pressed up against its point just before being withdrawn. The escape of the gas gave him a decided sense of comfort, both as regards breathing and the feeling of distension. The gas rapidly accumulated, so that 12 hours later he said he was suffocating in consequence of it. Hands, forehead and feet were cold, and his surface bathed in clammy sweat. Again punctured abdomen a little below and to the left of epigastrium, permitting the escape of still greater volume of inodorous gas, which whistled through the tube when introduced. The reaction following this was decided. He expressed the greatest sense of relief, surface and extremities became warm. Fifteen hours later, on ninth day, owing to tympanitis, for third time, punctured a little below point of second, and with similar result. The whole abdomen became soft, and up to time of death, 18 hours later, did not become much distended.

Respiration would doubtless have been rapid, but for the frequent use of morphine.

Tongue, which was always more or less furred in health, became thickly so the first day of sickness. On fourth day inclined to be dry. On the sixth day dry and brown. Eighth day sordes on teeth.

Had two free movements of bowels the early morning preceding illness, and a slight one soon after pain was first felt. No further evacuation until the sixth day, and then very little more than enema of two hours before. On the eighth and ninth days passed flexible tube to transverse colon and washed out with warm water, bringing away small amount of fæces. A few hours later injected by same method, and allowed to remain, ox-gall, Labarraque's solution and warm water, with the view of dissolving any hard fœcal matter which might have accumulated in colon and perhaps caused inflammation. This caused no evacuation. Twelve hours later, on ninth day, in same way injected turpentine, olive oil and warm water. This came away promptly, with expulsion of gas, but no fæces.

Urine was secreted freely throughout, of dark color, high specific gravity, but not albuminous. Catheter used but once. Last two days he retained brandy and water in stomach very well. It was also repeatedly given subcutaneously.

A sense of prostration was a noticeable feature throughout. Pulse was generally soft, small, easily compressible, running up to from 115 to 125, and remaining about the latter to within a few hours of death, which occurred near the end of the tenth day.

No rigor after the second day.

Abdominal tenderness was not a marked feature, and seemed less, both in intensity and area, after the third day.

Diagnosis.—At the beginning of the second day local inflammation in region of cæcum was made out, also some induration not considered to be due to contents of large intestine. Perforation with escape into peritoneal cavity was excluded by reason of the gradual accession of symptoms, and absence of sudden shock. Thought to be *typhlitis*, or *peri-typhlitis*, with suspicion that vermiform appendix was seat of original trouble. Dr. Willard Parker saw case 48 hours after attack and concurred in the opinion of local peritonitis, without feeling certain regarding immediate cause. Also saw him on eighth day; then decided against perforation, and rather in favor of typhlitis, probably depending on mass of hard fæces in cæcum. Hence the injections of colon. No accumulation of pus or other fluid could be detected, either by rectum or external surface.

Prognosis from the first was unfavorable.

Treatment.—Largely expectant. To control pain, to procure sleep, allay spasm and keep bowels quiet, morphine hypodermically as often as necessary. Stimulants and nutritive enemata. Fomentations to belly.

Six hours before death, when apparently moribund, and as a last effort, with the aid of Dr. Edson transfused about six ounces of fresh

milk, temperature of 100°. Aveling's apparatus was used. The median basilic vein of right arm was opened. The transfusion revived him perceptibly, caused no pain, warmed the surface and extremities, steadied the pulse.

Death near end of tenth day, without the faintest struggle.

Autopsy, 33 hours after death, assisted by Drs. Lowell, Edson and Willard Parker, Jr. Body frozen; abdomen prominent, as if moderately distended; longitudinal and transverse incisions through its wall, which contained a layer of fat an inch thick. Found tolerably firm, fresh inflammatory adhesions in right iliac region, gluing the cæcum to parietes. Inflammatory discoloration extended upwards to right hypochondrium on peritoneal covering of ascending colon, also involving most of transverse colon. Some folds of small intestine in right half of abdomen were injected, and slightly adherent to each other and to ascending colon. Whole intestinal canal moderately distended with flatus. The cæcum very large; contained only a small amount of fæces and not unusually hard. Its walls were extremely thin and tender, tearing almost as easily as damp paper. The whole ascending colon seemed to lack muscular life. Its mucous surface not affected. A small clot of blood was found on surface of small intestine, and about the point where it was punctured with aspirator needle, but caused no harm. The parietal peritoneum at the three points of puncture showed scarcely a mark. *Vermiform appendix*, at its junction with caput coli, was healthy and normal. It was so the first inch of its extent. The middle portion and extremity were swollen, softened, of dark, venous color, and suppurating; about three-fourths of an inch of extreme portion was nearly detached by recent ulceration. It was about the size of a Lima bean, dark, soft, contained pus, and was first mistaken for diseased lymphatic glands. Surrounding it was a pool of creamy pus, about one ounce, in peritoneal cavity, confined to iliac fossa, and walled in by recent adhesions. In the pool of pus, or at least in its vicinity, were found two hard bodies, which proved to be fæcal, about the size and shape of peas. They had escaped from the appendix, and doubtless caused the ulceration which led to perforation. Two flattened pieces were also found in same locality.

After presentation of this very interesting case, Dr. Segur remarked that it was possible patient died from lack of nourishment in a large measure, as his stomach had been irritable for years.

In reply to questions, Dr. Giberson thought he died of shock. The chills were like those of ague, and the highest temperature was immediately after second chill, being 104°.2.

He thought the pain on the seventh day meant perforation.

Dr. Segur thought the patient could not have died of shock, as the

pulse was not high for many consecutive days, and as so small an amount of morphia controlled the pain. He had noticed that death from failure of nutrition was often found where much adipose tissue was present, as it absorbed so slowly.

Dr. Stewart had seen a case of rupture of uterus, where patient lived *four* days, and was never in condition of shock.

The President had seen a case of diphtheria where not more than *four* ounces of food was taken in eleven days.

A CASE OF SUDDEN DEATH.

Dr. Westbrook related the following case, with a view to elicit opinions as to cause of death.

Patient came to the hospital complaining of having had a chill, followed by jaundice, nausea and headache.

No tympanites and no headache. Temperature 100°.5, pulse 104. The next day his condition was unchanged. Bowels moved, and had pain in R. hypochondrium. Temperature 101°, pulse 96.

The following day the temperature was 101°. He was treated by quinine and diffusibles. In the night attempted to get out of bed to use the urinal, but the night nurse put him back to bed, and he fell back and died.

At the autopsy the head was normal.

Abdomen distended. Peritonitis existed, but little effusion.

Lungs normal.

Heart contracted and filled with firm white clot extending into aorta and pulmonary artery.

It would seem to be death from heart clot; but its suddenness argues against that hypothesis. Could it be cardiac paralysis?

The Microscopic Committee reported that Dr. Williams' Thrombus was old and partly organized.

Drs. Szigethy and Williams were elected members.

N. B. Sizer, *Secretary.*

The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M., on the third Tuesday of each month, at Everett Hall, 398 Fulton St.

The September meeting will be held on the 18th, at which time there will be presented the following papers:

The Latent Stage of Chronic Bright's Disease. By Dr. B. A. Segur.

How Long ought Women to lie in bed after Delivery? By Dr. H. J. Garrigues.

Exhibit of Surgical Appliances in Wire-work. By Dr. A. L. Lowell.

'Ασκληπιὸς ὁ Σωτὴρ

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυνάων.

Hymns of Homer, No. XVI.

ITEMS.

——Papers for the Medical Society.—The President would be greatly obliged to any members of the Society who may desire to read papers this coming fall and winter, if they will notify him promptly, so that the programme for the season may be satisfactorily arranged.

——Medical Inspector Delavan Bloodgood, U. S. N., has been detached from the Navy Yard, Brooklyn, and ordered to the European Squadron as Surgeon-of-the-Fleet.

——Infant Mortality and Infants' Food.—The summer mortality from diarrhœal diseases, according to Dr. Baginsky, has quadrupled in Berlin during the past twenty years; no other cause of death has presented such a marked increase. In seeking for the cause of this mortality, Dr. B. made a series of experiments concerning the comparative merits of the articles of diet which are ordinarily allowed to infants. He experimented with human milk, cow's milk, condensed milk (Swiss), two varieties of farinaceous food, and two specimens of "prepared" infants' food. Each of these articles was exposed to a temperature of 67° for a period of twenty-four hours; he found that the human milk and that from the cow remained almost unchanged, but the Swiss milk and the other foods, although still appearing fresh and wholesome, yet exhibited bacteria in active motion. The reaction of the human milk was alkaline; the cow's milk slightly acid; the foods were strongly acid. After a further exposure of eighteen hours, the Swiss and cow's milk were found to be coagulated, while the four foods were in a high state of putrefaction. The human milk, however, still remained alkaline and appeared almost unchanged. These experiments are interesting as vindicating the high estimation in which the human milk is held; but their great lesson is the necessity of guarding the substitute-food from the putrefactive changes which are set up so rapidly in our hot season. Our summer mean temperature, in 1874, was fully 7° higher than that chosen by Baginsky for his observations. Nicer tests must be

applied to infants' foods, including those for acidity and microzymes. The relations of bacteria to cholera infantum have not yet been demonstrated, but their evil influence is suspected. Their coincidence with diarrhœal mortality in the tenement-house districts is noteworthy, if we can rely upon the statements of those who state that the air of tenements is polluted, not only by causes from without, such as filthy streets and gutters, but by the very walls and appurtenances within them, which reek with low forms of life in the hot season. Their collected filth then takes on an unseen life and activity, putrefactive germs increase and multiply, float in the air, and, no doubt, attach themselves to, and contaminate the articles of food and drink which lie exposed. So that the increased care with reference to the covering of food, and the keeping of it at a low temperature, assumes a new importance in those sections which Dr. Elisha Harris has styled the *"pauvres faubourgs"* of our cities.

——Metric System.—A card for office-use, of the size of a foolscap page, has been prepared by Hance Brothers and White, of Philadelphia. This will be very convenient for reference to those intending to adopt the metric system in prescribing.

——Dr. William Le Roy Stevens, House Surgeon to St. Peter's Hospital, lost his life in the line of his duty, June 24th, 1877, aged twenty-two years. He was a native of Richmond, Virginia, was educated in arts and medicine in the University of that State, took his M.D. in 1876. He came north for further professional study, passed a competitive examination for St. Peter's service, and went on duty January, 1877. On June 15th he received a dissecting wound—a very slight scratch on end of left index finger. This was almost immediately followed by grave symptoms, by phlebitis, septicæmia, pneumonia and empyema, which in nine days overwhelmed his vitality. The autopsy by means of which this infection arose was on a subject dying by diffuse phlebitis, suppuration on left side and same thoracic conditions. The Medical Board of the hospital have transmitted to the family of their late surgeon resolutions of respect and condolence.

——Hay Fever.—A gentleman who has made four journeys in Egypt and Palestine writes us as follows: "I have had occasion to try the Racquette Lake region for hay fever; have been there several times with good results. But Palestine or Egypt is much better. The good effect lasts several years in my case. I consider that it is due to open-air life, under a tent, in a very dry climate, or on the desert." If this experience is not an exceptional one, it will tend still further to mystify our notions of the causation and treatment of this already sufficiently mysterious malady.

The last Report of the Hay Fever Association (F. B. Fay, Chelsea, Mass., Secretary), printed in June of this year, and just received, states that the nitrite of amyl was used last year by a few patients, with no little benefit. Inhalations of the amyl are taken directly from the bottle. The bromides are named, along with forty other prescriptions and drugs. The vapor of chloral hydrate has also been recently recommended; but no results have been published of its trial.

——KINGS COUNTY INSANE ASYLUM.—On the 1st of August Dr. Ralph L. Parsons assumed the medical superintendency of this institution. Until recently Dr. P. has occupied a similar responsible position at the Asylum on Blackwell's Island. No removals from the previous staff at Flatbush have been made. One addition to the medical staff has been made in the person of Dr. Edgar Moreman, who was formerly an assistant physician at Blackwell's Island Asylum.

——PUBLICATIONS RECEIVED.—*Surgical Observations, with Cases*, by the late Dr. J. Mason Warren, Surgeon to the Massachusetts General Hospital, is a handsome volume of 630 pages. The book was privately printed about ten years ago at a cost of ten dollars a copy; it is now offered for sale at the very low price of $3.50 by A. Williams & Co., of Boston. It should be in the possession of every practitioner of surgery.

Disease of the Mind, by Dr. C. F. Folsom, Secretary of the Massachusetts Board of Health. This essay originally appeared in the last Report of that Board; it is now published in separate form, by request. It is well worthy this special dress. In our July number brief reference was made to this excellent paper. Price $1.25. (A. Williams & Co., Boston, Mass.)

The Association of Medical Colleges, with a history of its organization From Dr. Leartus Connor, Secretary, of Detroit. This Association starts out with twenty-three colleges of the sixty or more in the country, and has the avowed sympathy of seven or eight others—sufficient to make up nearly one-half of the total number.

Mortality Reports from New York, for the first quarter of 1877, and of this city for the first half year, show a death-rate for these periods, respectively, of 22.22 and 20.01 per 1,000. In every weekly and other bill of mortality of the New York Board of Health, there now appears regularly the following explanatory foot-note, which tends to vitiate the statistics received from this city: "The deaths in the public and penal institutions of Kings County, at Flatbush, are not included in the mortality of Brooklyn, *although that city represents* (contains) 95.15 *per cent. of the total population of Kings County.*" This is given in connection with their comparative-mortality list of principal cities.

In this connection let us note the mortality at some of the COUNTY

INSTITUTIONS for the year ending July 31st, 1877—*for such is the time of the closure of their official year*, though for what reason so unaccustomed and impracticable a period should be chosen it is impossible to imagine. Deaths at the County Hospital, for 1876–7, were 311; at the Insane Asylum, 61; at Almshouse, 155, and at the Hospital for Incurables, 13, in all 540 deaths. * * * If the county authorities continue to find it necessary to have their reports handed in at the end of the second month of summer, it would be well, for medical and scientific purposes, to have an additional statistical table, that may be compared with cognate statistics of the vicinity.

——THE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIATES will hold its Eighth Annual Meeting at Chicago, September 12th, at which important papers will be presented. The Secretary—who is also editor of the *Quarterly Journal of Inebriety*—may be addressed at Binghamton, N. Y.

——DR. A. B. CROSBY, formerly professor in the Long Island College Hospital, died August 9th, in Hanover, N. H., after two days' illness, the nature of which has not been made known. Dr. Frost writes:

"Dr. Crosby was not known to be ill till August 1st by anybody but himself, and he only knew for four days before that he was unusually thirsty and probably felt languid. On August 1st, while listening to Dr. Peaslee's Introductory Lecture, he said that all the black-haired men on the back seats had spectacles on, and he also noticed trouble with vision for all objects a little beyond ordinary focal distance. The thirst increased so that as he lectured he was obliged to wet his mouth constantly. The urine was much increased in quantity—specific gravity, 1033; sugar, ten per cent. Monday, 6th, he took a swim in the river; also Tuesday—an injudicious proceeding. Wednesday, 8th, he kept the house. Wednesday night symptoms not much changed. He passed urine at 8 P. M., again at 4 A. M., Thursday, but in small quantity, and again at 8 A. M. Soon after he grew comatose, and at nine, when I saw him, he could not be roused, and swallowed only till a little after ten, and died at one P. M. The lesion *distinctly* found on autopsy was with the kidneys. One of these I sent to Prof. R. H. Fitz, of Harvard College, and he reports kidney extensively diseased, scarcely a normal tubule present. * * * With the microscope an excessive fatty and granular degeneration of the tubular epithelium. Parenchymatous Nephritis was evident, etc., etc." Dr. Crosby delivered, in 1873, an oration before the Kings County Society on "The Significance of Pain."

——DR. A. N. BELL has removed to Garden City.

——The Medical Register.—Copies of the Volume for 1877–'78 can be obtained at the office of Dr. C. H. Giberson, 96 Clinton Street.

——Announcements.—A second and enlarged edition of *The Cyclopædia of Education* is in preparation by E. Steiger, 22 Frankfort Street, New York, Professors Kiddle and Schem editors. The same house and editors announce a new annual, to be called "The Educational Year-Book," and will contain not less than 200 pp. octavo, uniform with the *Cyclopædia*.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1877.

President.....Alex. Hutchins, M. D., 796 DeKalb Av.
Vice-President.....C. Jewett, M. D., 310 Gates Av.
Secretary.....R. M. Wyckoff, M. D., 532 Clinton Av.
Assistant Secretary.....N. B. Sizer, M. D., 336 Greene Av.
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CENSORS.

J. D. Rushmore, M. D., (Senior Censor), G. W. Baker, M. D., R. M. Buell, M. D., J. H. H. Burge, M. D., F. W. Rockwell, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1874 to 1878.)

Drs. J. Byrne, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. L. Zabriskie, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. A. N. Bell, T. P. Corbally, J. Walker, W. E. Griffiths, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, W. E. Griffiths, J. A. Jenkins, Drs. W. G. Russell, N. Matson, F. W. Rockwell, Drs. R. M. Buell, R. W. Wyckoff,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, SEPTEMBER 18, 1877.

HOW LONG OUGHT WOMEN TO STAY IN BED AFTER DELIVERY?

BY H. J. GARRIGUES, M.D.

It may seem quite superfluous to ask, how long ought women to stay in bed after delivery, since almost everybody, within and without the profession, will answer: nine days. This has indeed been the rule in all countries since time immemorial. But the searching spirit of our age, that has little respect for old traditions, unless their value is proved by new methods or new experiments, has also examined this custom, and the result, so far, is that quite opposite answers are given to the above question. Some advocate a much shorter time than that consecrated by use, others a considerably longer one. It may therefore be well worth our while to see, first, how this question is treated by some eminent practitioners, and, secondly, what light anatomy and physiology throw on it?

Dr. Goodell, in his paper on *Prevention and Treatment of Puerperal Diseases at the Preston Retreat** in Philadelphia, says: "On the morning following the day of her labor the woman slips into a chair whilst her bed is making. This is repeated once or twice a day until the fourth or fifth day, when she, if so disposed, gets up and dresses herself. No

*American Supplement to the Obstetrical Journal of Great Britain and Ireland, July-August, 1874.

patient quits her bed against her will, yet the force of example is so great, that very few care to stay in bed when they see their companions up and about."

I have personal knowledge of only one case in which a similar treatment was prescribed and carried out. The patient is a friend of mine, and has given me the particulars. Her doctor made her rise on the fourth day, and when she felt unwell, engaged her to take a ride in a carriage on the fourteenth day, which nearly cost her her life. She was taken with chills followed by hemorrhage and convulsions. But it would of course be hasty to draw any general conclusion from this single case. In the Preston Retreat 756 women had been treated in this way when Dr. Goodell's paper appeared, and the total mortality from all causes had only been six—certainly a most satisfactory result.

Dr. Goodell adduces the following reasons in favor of encouraging women to get up early: First, Labor being a physiological process, it should not be made to wear the livery of disease. Second, The upright position excites the uterus to contract, and lessens the amount and duration of the lochia. Third, Uterine diseases are hardly known among the nations whose women early leave their beds. Fourth, Experience has shown him that convalescence is rendered far more prompt and sure.

Being restricted to great brevity, I would only remark on the first head that the women of our time are not in a normal physiological condition. On the second, that flexions are liable to be brought about by the weight and flaccidity of the womb before the contractions impede it, and that the amount of lochia is also much diminished by injections of carbolized water into the vagina. On the third, that we do not know much about the condition of the uterus in ancient or far remote people. Finally I think Dr. Goodell's excellent results are due to his other measures, which (with one exception) I find highly commendable. There is no doubt that they diminish infection, and hence mortality. But I do not think that the final result can be judged of within sixteen days, the average time the patients stay in the establishment after delivery. If a thousand women treated in this way were compared in after-years with a thousand who have been kept quiet for weeks, I believe we would find more flexions, versions, subinvolutions, prolapsus, etc., in the former than in the latter class, and in order to substantiate this view, I will only point to the fact that these diseases are much more common in the lower class, who cannot afford to lie long in bed, than in the upper walks of society.

In England some obstetricians are also in favor of shortening the time which a woman is kept in bed after parturition. I have not the leisure to make a comprehensive study of the rules laid down by all authors,

but from the unanimous verdict given in the works within my reach, I conclude that the leading obstetricians and gynecologists in different European countries either retain the old practice or even prolong the rest in a recumbent position. *Scanzoni** sanctions in general the custom that lying-in women should not leave their bed before the ninth day, because this corresponds about with the period in which dangerous diseases most frequently make their appearance after delivery, in which the increased susceptibility subsides, and in which the functions of the bowels and breasts acquire some regularity. The same is taught by *Naegele.*† *Siebold*‡ recommends rest in bed till the eighth or tenth day.

Schroeder§ prescribes an uninterrupted recumbent postion for at least a week, and longer if it agrees with the patient. *Spiegelberg*‖ says that the woman shall keep her bed eight to ten days. If she is entirely well, she need not submit slavishly to this rule. She may leave her bed at the end of the first week for a few moments, but she ought never to walk about before the time indicated above, and still less undertake any domestic work, even in her own room. *Cohnstein*¶ thinks that corporal rest extended over a fortnight is absolutely necessary, and *Bischoff*** follows the same rule. *Barnes*†† says that the upright posture within the first week or fortnight will surely increase the local vascular tension, and promote displacement of the uterus.

Playfair‡‡ expresses similar views more explicitly. "It is customary," says he, "among the better classes, for the patient to remain in bed for eight or ten days; but, provided she be doing well, there can be no objection to her lying on the outside of the bed, or slipping on to a sofa, somewhat sooner. After ten days or a fortnight she may be permitted to sit on a chair for a little; but *I am convinced that the longer she can be persuaded to retain the recumbent position, the more complete and satisfactory will be the progress of involution*, and she should not be allowed to walk about until the third week, about which time she may also be permitted to take a drive." Finally *Gallard*§§, of Paris, goes still farther, and states

*Scanzoni Geburtshülfe, Third Edition, 1855.

†Naegele, Geburtshülfe, 1864, p. 289.

‡Siebold, Geburtshülfe, § 762.

§Schroeder, Geburtshülfe, 1870, p. 162.

‖Spiegelberg, Geburtshülfe, 1877, p. 232.

¶Cohnstein, Geburtshülfe, 1871, p. 95.

**Schmidt's Jahrbücher, 1876, 6.

††Barnes, Diseases of Women, London, 1873, p. 472.

‡‡Playfair, Midwifery, London, 1876. II. 252.

§§Gallard, Maladies des femmes, Paris, 1873, p. 221.

that he does not know anything more dangerous than the popular habit of limiting to nine days the rest of confined women. He would like to see this period extended to at least twenty or twenty-five days. Thus would be avoided many inflammations of the genital system that are only due to these premature exertions.

The latest publications, then, in the three chief countries of Europe, that have come to my notice, are all in favor of an absolute rest in the horizontal position, one, two, or even three or four weeks after parturition. In order not to be misunderstood, as if in this question America were opposed to Europe, I will add that great obstetricians of Brooklyn and New York, with whom I have had the opportunity to speak about the subject, are likewise in favor of prolonged rest.

After having seen the practice of prominent obstetricians, let us consider the anatomical and physiological facts which bear upon the subject.

First of all we will examine the condition of the womb in the puerperal state. Of late years several authors, such as Hecker, Heschl, Boerner, Duncan, Serdukoff, Autefage, have investigated its *dimensions* and weight. *Boerner** has instituted exact measurements in sixty-four cases, both internally by aid of thick sounds and externally with the measure. Immediately after delivery the length of the uterus varied between 12 and 19 centimeters (4¾–7½ inches), a fortnight later it was yet between 9 and 12 centimeters (3½–4¼ inches), whilst the length of the uterine cavity in the non-puerperal state is from 6 to 7 centimeters (2½–2¾ inches). At the first examination the fundus stood 11 centimeters (4¼ inches) above the symphysis pubis, and the uterus measured in width 10 centimeters (almost 4 inches). The elevation above the symphysis diminishes during the first twelve days to 5.2 centimeters (2 inches), and on the twenty-second day it is still 4.6 centimeters (1¾ inches). It appears, then, that the uterus, even at the end of the third week, rises above the brim of the pelvis. The normal size is first reached when it stands at the most three centimeters (1⅛ inches) above the symphysis pubis.

Some caution is necessary in taking these measures. The uterus, during its retraction, becomes more and more anteflected, so that the part felt above the symphysis at last is not the fundus, but the posterior wall. Accordingly, the fundus has to be raised from the vagina before measuring.

It is likewise very important to distinguish the plane that corresponds with the brim of the pelvis, and consequently slopes down in the erect

* Boerner: Ueber den puerperalen Uterus. Graz, 1875.

position, forming with an horizontal plane an angle of about sixty degrees, from a plane laid horizontally through the upper border of the symphysis, the body being in the perpendicular position. These two planes are almost constantly confounded in text books, and consequently the student is apt to get an erroneous idea about the normal size and position of the uterus. The fundus surmounts almost always the latter plane, whilst in the great majority it does not attain the plane corresponding with the brim of the pelvis, but is situated from 2 to 2½ centimeters (¾–1 inch) below it.*

It appears, then, from Boerner's measurements, that the uterus at the end of the second week is still about one inch higher, and at the end of the third week more than half an inch higher than in the non-puerperal state.

Heschl's† investigations about the *weight* of the uterus after delivery are still more significant. According to him, it weighs from twenty-two to twenty-four ounces immediately after parturition, at the end of the first week from nineteen to twenty-one ounces; at the end of the second week from ten to eleven ounces; at the end of the third week from five to seven ounces, and it does not reach its normal weight, which is about an ounce and a half (varying from a little above one to almost two ounces) before the end of the second month.

It appears from these measures that the womb has only lost little in weight at the end of the first week, that the greatest diminution takes place during the second week, and that at the end of the third it is still three or four times heavier than the non-puerperal uterus.

Particular interest attaches to the condition of the inner surface of the uterus. Formerly it was believed that the whole mucous membrane was cast off, so that the muscles were denuded. This is not so. The epithelium is indeed gone, and the muscular coat is only covered with a thin, soft, moist, reddish layer, that is easily scraped off. The process is differently explained by different investigators, but as this has no bearing on our present subject, I will not enter into any details about it. Suffice it to state that there is no new mucous membrane formed before the third or fourth week, and that the regeneration often lasts much longer.‡ According to Robin, the process begins still later and is only finished from sixty-five to seventy days after parturition.§

The repair is slowest in the place in which the placenta has been inserted. Immediately after delivery its open veins are closed by the

* Sappey: Anatomie Descriptive, III., pp. 662.

†Zeitschrift der Wiener Aerzte VIII, 1862.

‡Spiegelberg, Geburtshülfe, pp. 214-215.

§ Depaul: Clinique obstétricale, Paris 1876, pp. 768-769.

double process of muscular contraction and thrombosis. Later the walls of the veins coalesce; many of them undergo fatty degeneration and are absorbed. The thrombi are in part disintegrated and carried away with the lochia or absorbed; in part they become organized.

The vaginal portion is exposed to considerable injury during the expulsion of the fœtus. In almost all cases it is more or less torn, and very often the mucous membrane of the collum becomes inflamed. Often ecchymoses are found in the tissues of the vaginal portion. The involution of this part takes several weeks.

The so-called ligaments of the uterus have been obliged, during pregnancy, to accompany it up to the epigastrium. When, immediately after parturition, the fundus stands below the umbilicus, they are entirely relaxed. By degrees the superfluous tissue is absorbed, and their elasticity restored, so that they again become able to sustain the uterus, and prevent any alteration in its shape or position.

The uterus is likewise, for a long time, deprived of the support given it from below, by the vagina and vulva. These are not contracted before three or four weeks. The entrance to the vagina is almost always more or less injured, and the lesions heal rather slowly.

The muscles and the skin of the abdomen are, immediately after delivery, in a flabby condition, and it takes five or six weeks before they regain their firmness, so far as it is recoverable. Consequently at a period in which the uterus still surmounts the brim of the pelvis, it lacks support in front, as well as from below and from the sides.

To sum up, anatomy and physiology teach us that, after parturition, the uterus is large, heavy and flabby; that all the surrounding parts destined to support it are distended, soft and yielding; that its interior presents a large wound; that the placental site is pervaded by veins filled with recently-formed blood-clots; that the whole interior surface is bathed in a fluid rich in disintegrated tissue elements; that the process of transformation, absorption and restitution requires at least two months, and that the retrogression is most marked during the second week. All this speaks evidently in favor of those who want to prolong the customary time of rest in a horizontal position, and against those who recommend to abridge it.

The erect and sitting posture are apt to produce changes in the shape and the situation of the uterus that again will hinder free circulation in the organ, and disturb its involution.

By movements the thrombi may be detached and form emboli, a frequent cause of sudden death after child-bearing, or may give rise to dangerous secondary hemorrhage. It must also be borne in mind

that the so-called *pyrogenic* and *phlogogenic* substances,* that is to say substances which, entering in the system, produce fever or inflammation, are much more easily absorbed from a part when it is moved than when kept quiet. The movements tend to force the poison into the lymphatic vessels, and direct experiments on rabbits and women, by Kehrer,† have proved the lochial secretion to contain a pyrogenic substance.

If somebody, with the intention to oppose common experience to scientific reasoning, will point to the Indian squaw, who, on approach of labor-pains, goes alone out into the woods and brings home her papoose on her back, I will answer that people who are still little influenced by civilization have remained nearer the primitive stage, which we also find in animals. As they have not the advantages of an ancient civilization, they are also free from its drawbacks.

The time during which the woman ought to occupy a recumbent position cannot be fixed by days, as it does not depend on the length of time in itself, but on the work performed during this time. In order to judge of this, I am in the habit of examining every day how high the fundus stands above the symphysis. This affords at the same time the advantage that supervening inflammatory processes are immediately discovered. I do not permit the patient to leave her bed before the uterus has retired from the abdominal wall, and subsided behind the symphysis. Then I think that it finds sufficient support in the true pelvis. In most cases this is about two weeks after delivery. During the next week I engage the patient still to lie down for hours every day on a lounge, and warn her especially against bending down to take anything up from the floor, for a fortnight.

Even if there has been a subinvolution before the last pregnancy, it is advisable to keep the patient in bed as long as we observe a shrinking of the uterus; and to favor it by appropriate means.

In poor people it is often impossible to enforce so protracted a rest after delivery, but this is only one instance in many which shows that they are less favorably situated than their richer sisters. It has not the least bearing on the question how long we ought to recommend a woman to stay in bed.

In women wealthy enough to take good care of themselves, we had better try above all to eradicate the superstition concerning the nine days, by telling them beforehand that, even if they feel perfectly well,

* *Billroth:* Allgemeine Chirurgische Pathologie und Therapie, 2te Auflage, pp. 98, 99 and 356.

† Amann: Klinik der Wachen boettkrankheiten. München, 1876, p. 70.

they must be prepared to stay a little longer, if not in bed, at least in a recumbent position on a lounge.

DISCUSSION.

Dr. Skene remarked that the question raised in this most valuable paper is of great importance to the Society, from its practical character.

When we call to mind the vast amount of suffering which arises from errors in the management of parturient women, we appreciate the deductions drawn from the literature on the subject, and from the facts in the *post-partum* anatomy and physiology of the pelvic organs, so clearly, yet briefly, presented by the author of the paper.

It is a fact that the majority of uterine and pelvic diseases, which have their origin in child-bearing, are *preventable* by proper care on the part of obstetricians. We cannot shield ourselves behind the statement sometimes made, that labor is a normal process, and when uncomplicated requires but little skill or care on the part of the medical attendant. A process which often produces conditions which tend to develop many diseases in after life is not to be trusted, in any of its details, to nature uncared for.

The physician who guides a patient safely through the performance of so great a function manifests the highest skill and judgment, and renders a service equal to any duty in the profession.

I was interested in hearing the author of the paper question the teachings of Dr. Goodell, who has broken away from the time-honored practice of obstetricians in regard to treatment after delivery. I have the highest regard for Dr. Goodell's ability, but I cannot fully endorse his treatment of patients after confinement. Although his percentage of recoveries is good, that is no proof that his patients will all escape trouble in time to come. The diseases which are traceable to errors of treatment in confinement do not always appear until after the time when the patients usually pass from the care of the obstetrician.

The reasons generally given for early rising after confinement are questionable. Vaginal drainage may be improved by the patient taking the erect position, but that contraction of the uterus is favored in the same way is doubtful; and regarding the statement so often repeated, that Indian women exercise with impunity immediately after delivery, is more than doubtful.

From my observations of diseases of women, which arise from child-bearing, I am led to agree with Dr. Garrigues, in his advice to lengthen the period of rest after labor, rather than deducting from the usual nine days' confinement in bed.

If the practice of the past is to be improved, it must be by following some such teachings as are set forth in the paper. The rules laid down by Dr. Garrigues are very good so far as they go, but alone they are not sufficient to guide us in all cases. If we base our treatment on the progress of uterine involution we are liable to be led astray. We cannot always tell the size of the uterus by any justifiable examination, and even if involution is progressing normally, there are many other conditions bearing on the question which ought to be taken into account. Lacerations of the cervix uteri, vagina or perineum, excessive or prolonged lochial discharges, anæmia and general debility, either or all of these, when present, demand rest for the patient long after the usual time of getting up.

On the other hand there is danger in keeping the patient in bed too long. Rest, beyond what is necessary for recuperation, is injurious. I believe that it interferes with the process of uterine involution, and favors that debility and relaxation which we desire to guard against. From this it follows that no stated time can be fixed that will apply to even a majority of cases; the question must be settled in each case according to the condition of the patient, and not by the length of time after delivery. We specify no date in the progress of a pneumonia or typhoid fever when the patient shall leave the bed, but we settle that question by the general condition of the patient. The same rules, it seems to me, should apply in obstetric practice. Again, the practice of keeping the patient in the recumbent position for nine or ten days, and then permitting her to be up and about all day, is unsafe practice. Short periods of rest in the recumbent position during each day, for two or three weeks, as advised in the paper, cannot be commended too highly.

By attention to such rules there would be fewer cases requiring the care of gynæcologists.

——Dr. A. B. Clark recommended to the attention of practitioners, that portion of the paper which referred to the dangers arising from prolonged recumbency. We must avoid that form of muscular asthenia and those atrophic evils which arise from want of exercise and change of posture.

——Dr. R. Hesse.—The woman will suffer if allowed to remain in bed too long. One point in the investigations of Berners was not mentioned in the paper—the average length of time after delivery at which the uterus disappeared below the brim is nine days and twelve hours.

——Dr. Sizer.—As to the comparisons that are hastily made between the Indian squaw and the civilized woman, this point should be considered: the size of the fœtal head of the savage averages one-eighth to three-eighths less in its various diameters; the pelvis of the different

classes of females being about the same. . . . Puerperal fever is by no means unknown among squaws. . . . It will be interesting some day to compare notes with the females of certain tribes of Central Africa, among whom the practice prevails of putting the father to bed for twelve days, and compelling the mother to get up at once and attend to her usual duties.

——Dr. A. Sherwell.—This practice is not unknown in the Western hemisphere; the twenty thousand Digger Indians of the Pacific slope observe it.

——Dr. B. M. Briggs.—Flexions and other uterine complications will follow too long rest, just as truly as they follow a premature getting up. His practice is to advise a gradual assumption of the upright posture, beginning generally on the fifth day. The patient is not to lift anything heavy, or do hard work for a fortnight. . . . The too common practice is to make unnecessary changes in the diet; he orders a diet almost similar to that taken before delivery.

——Dr. F. H. Stuart.—We should observe the answer to the question, How does she feel? and manage the puerperal condition as we would any other ordinary convalescence.

THE PREVALENCE OF UNRECOGNIZED CHRONIC BRIGHT'S DISEASE: ITS DISCOVERY IN APPARENTLY HEALTHY SUBJECTS.

BY B. A. SEGUR, M.D.

Eleven thousand and eleven persons died in Brooklyn, in 1874, from all causes. From Bright's disease 190 deaths were recorded, one and seven-tenths per centum of the deaths from all causes.

Of fifteen diseases arranged in order of number of deaths recorded from each, Bright's disease stands last.

Uræmia is given as the cause of 37 deaths; nephritis, 38; and all diseases of the urinary system, 311.

If the number of deaths from uræmia and nephritis be added to that recorded from Bright's disease, the total number of 311 is obtained of deaths, in most of which, it may be supposed, albuminuria was recognized.

From tables given in Dickinson's "Pathology and Treatment of Albuminuria," I have made the following:

Table showing the secondary and other affections associated with 155 fatal cases of Bright's disease, under observation of Dr. Dickinson, in all of which a post-mortem examination was made:

Hæmaturia	32	Croup and diphtheria	4
Frequency of micturition	21	Hypertrophy of heart	32
Pain in loins	24	Apoplexy	3
Œdema	120	Epistaxis	6
Ascites	50	Atheroma	15
Hydrothorax	35	Hematemesis	3
Fluid in Pericardium	4	Purpura	3
Erysipelatous inflammation	9	Affection of retina	5
Pneumonia	25	Vomiting	32
Pleurisy	17	Diarrhœa	26
Peritonitis	9	Convulsions	19
Pericarditis	19	Coma without convulsions	16
Endocarditis	5	Other cerebral symptoms	18
Bronchitis	33	Gout	2
Enteritis	4		

Thirty-nine of the 155 deaths were from acute Bright's disease and had œdema, a symptom which would necessarily lead to the discovery of albuminuria.

But of the 116 deaths from the chronic forms of the disease, only 82 had œdema at any period of their history. Many of the cases in which pneumonia, bronchitis, pleurisy, hydrothorax, pericarditis and other inflammatory affections occurred, or in which convulsions and coma were symptoms, would have these complications as the immediate causes of death. This table, then, suggests the probability that a considerable number of deaths recorded under other names have for their primary cause chronic Bright's disease.

On page 404 of Vol. IV of Reynolds' System of Medicine, is a table of "frequency of pericarditis, pleurisy, peritonitis and pneumonia in cases of Bright's disease of the kidneys," in which 1,228 recorded cases of Bright's disease are collected. Pericarditis occurred in 1 in 12.3 cases: pleurisy, 1 in 6.1; peritonitis, 1 in 13; pneumonia, 1 in 7.6.

These are the proportions of pneumonia, etc., in fatal cases of recognized Bright's disease. I have not found any data to show how large a proportion of the deaths recorded from pneumonia, pleurisy, and other inflammatory diseases of the respiratory system, and from convulsions, coma, and other diseases of the nervous system, and from hypertrophy of the heart, pericarditis, and other diseases of the circulatory system, and from all other diseases, should have been reported deaths from Bright's disease, for the reason that the reported and recorded causes of death were secondary affections.

Thus in Dickinson's 155 fatal cases of Bright's disease only 3 had

apoplexy, yet Dr. George Johnson states that one-half of the deaths from apoplexy are of persons having Bright's kidney. In Brooklyn, in 1874, 216 deaths from apoplexy are recorded. If Dr. Johnson's statement is correct, one-half of these 216—108 deaths—from this one cause are to be added to the recorded deaths of Bright's disease. Systematic writers on pleurisy, pneumonia, etc., give prominent place to Bright's disease in their etiology, and I find in Vol XV. of Ziemssen, pp. 148–9, the following summary statement :

"Among the results of the contamination of the blood by the urinary matters retained in it, are to be reckoned lastly *the marked tendency to inflammatory affections exhibited by patients who have kidney disease.* * * * Indeed, so common are they in renal disease, that, according to some, these inflammations are the immediate cause of death in the larger proportion of cases of Bright's disease, so-called ; and probably they do lead to death in the various forms of diffuse nephritis more frequently than do dropsy, uræmia and apoplexy reckoned together."

A very important advance of our knowledge will be made when we can state how many cases of acute inflammatory and other diseases are secondary to degenerative changes, and particularly in the kidneys.

In the year 1827 Dr. Richard Bright published his "Reports of Medical Cases, selected with a view of illustrating the Symptoms and Cure of Diseases by a reference to Morbid Anatomy." Before that date, the short chapter on diseases of the kidney would have treated of the events of common inflammation, suppuration and abscess, and the organ would appear in causes of death as infrequently as the spleen does now.

Renal pathology began when Bright showed the relations between dropsy, albumen in the urine, and structural disease of the kidney. He, also, at the same time, observed the association of hypertrophy of the left ventricle of the heart, and of certain nervous diseases, with the disease of the kidney.

Contributions to the clinical history, morbid anatomy and associated pathology of Bright's disease of the kidney have since been made by a long list of writers, the very titles of whose works are interesting, because they show the gradually extending field of the investigations of the nature and relations of the various forms of morbid change in the kidney, and the diseases secondary to Bright's disease.

The earlier writers were principally concerned with dropsy and the renal disease giving rise to it ; but now the careful studies of morbid anatomy of the kidney, and the elaborate clinical histories involving the succession of symptoms in the nutritive, circulatory, respiratory and nervous systems, all secondary diseases resulting from the deterioration of the blood when the kidneys are diseased, make large volumes, and the end is not yet

Thus Rindfleisch writes :

"Inflammation of the kidneys is the portion of pathological anatomy the most studied and the least understood."

It is interesting to note the progress of knowledge of the anatomy of the kidney in this advancing period of renal pathology. Quain, "Anatomy," 4th ed., 1839, describes in the kidney a cortical portion "formed almost entirely by the capillary terminations of blood vessels," and a "medullary part," "made up of a series of minute tubes." This extent of knowledge had existed from Malpighius, 1686, Bellini, 1711, and Ferrein, 1749.

The present knowlege of the varieties and extent of the renal tubes—straight, looped, convoluted and communicating ; of their epithelium; of the capillary systems and of the relation of the Malpighian bodies to the tubes ; of the matrix or connective tissue of the kidney, etc., together with matters still in doubt and controversy, is the work of many anatomists, among whom are, in chronological order, Bowman, 1842; Goodsin, 1842 ; Gerlach, 1845 ; Huschke, 1845; Kolliker, 1846 ; Toynbee, 1846 ; Muller, 1851 ; Isaacs, 1857 ; Heule, 1862. It will interest the members of this Society to see the beautiful illustrations, drawn from his own microscopic preparations, of the difficult and disputed points of the anatomy of the kidney, the work of a former member of this Society, the late lamented Dr. Isaacs, published in the Transactions of the New York Academy of Medicine, 1857.

In view of all these advances in knowledge of the structure and of the diseases of the kidney, the words of Dickinson are just: "The great field of research, which, until the time of Bright, was veiled in primeval obscurity, has since been cultivated with an assiduity which has more than made up for centuries of neglect."

It is not necessary for my purpose that any time should be occupied with the consideration of the various forms of structural changes of the kidneys, their relations and minute morbid anatomy; about all these matters there are great difficulties and many conflicting views.

It is because these views are partial, premature, or, at least, not established, that the Provisional Nomenclature of the Royal College of Physicians of London ignores the numerous proposed classifications of the original investigators and systematic writers on Bright's disease, and proposes the following :

"Bright's Disease. Synonym, Albuminuria. Definition: a generic term including several forms of acute and chronic disease of the kidney, usually associated with albumen in the urine, and frequently with dropsy, and with various secondary diseases resulting from deterioration of the blood."

Then the nomenclature gives the synonyms of acute Bright's disease and of chronic Bright's disease, showing how the forms and terms of the various authorities are to be divided between the two. This is a classification from a clinical stand-point and is the diagnosis which can be made in practice.

I wish to introduce what I may have to say on chronic disease of the kidneys by the following quotation from Beale ("Kidney Diseases," p. 1): "Kidney diseases, unfortunately, are in these days but too common, and many of them are grave. But if we detect them at an early stage, before any general constitutional changes have been induced, as the labors of Richard Bright, William Bowman and George Johnson have enabled us to do, we may in very many instances be of real service to the patient."

Now it is just this one most important point, the early recognition of the existence of Bright's kidney in a given case, or of the incipient stage, or even conditions tending thereto, that the books have afforded me the least aid. All the writers that I have consulted set forth the existence of this formative stage and of certain constitutional states predisposing thereto. Thus, with reference to the influence of the blood and general states of health as predisposing to Bright's disease, Aitken writes:

"In the order of morbid changes," * * "an altered, defective or contaminated state of the blood is the source, in all probability, of the morbid phenomena which follow." * * *

Passing from these very general considerations, which may serve, however, to direct the inquiries of the physician in certain cases, we have to consider the access of Bright's disease in its chronic forms. Here it is not, as in acute disease, a sudden change from a condition of health, comfort and activity to conscious indisposition or a sick-bed. Neither is the early progress of the disease marked by such symptoms or impairment of health and strength as to lead the subject of this disease to the physician, or, indeed, should the latter be consulted, would the history given be at all likely to indicate the existence of grave disease. On these points I desire to read most emphatic and vivid testimony.

"Chronic Bright's disease, in the great majority of instances, begins slowly and imperceptibly. It is rarely detected until it has already existed many months—it may be years. The fatal disorganization of the kidneys proceeds silently, amid apparent health."—(*Roberts.*)

"Involving the organ not all at once, but by little and little, the disease makes itself felt not suddenly, but with so gradual a departure from health, that its date is usually underterminable, and its existence unsuspected until it has reached an advanced stage."—(*Dickinson on "Granular Kidney."*)

"The commencement or the starting point of these several forms of chronic renal degeneration is with difficulty fixed. Unlike the acute form, which commences with

febrile disturbance, the transition from an ordinary state of health to one of failing energy is imperceptible, and oftentimes unnoticed except through some accidental concident.

"A slight cold, some bronchial catarrh, is marked by evidence of greater prostration than is at all commensurate with the local complaint. In professional life or among those raised above the sphere of bodily labor some mental strain or subject of business anxiety induces a degree of debility and exhaustion quite disproportionate to the event. In some occasional embarrassment in the breathing, in others a sense of fatigue and painful weariness after the most moderate exertion, in others a peculiar and persistent headache, indicates the insidious advance of these chronic forms of degeneration and decay." * * "These trifling and inexpressive symptoms are often passed by as insignificant; rest and tonics are thought sufficient for them. The state of the urine is often overlooked."—(*Basham.*)

"The earlier symptoms are very slight; such, indeed, as might easily escape notice. I have seen several cases in which the renal lesion was sufficiently distinct on post-mortem examination, but in which there had been no albuminuria and no dropsy during life. Still, in a large proportion of cases symptoms do exist, and a careful observer will not fail to detect the malady. In many cases it is unsuspected until secondary diseases manifest themselves."—(*Stewart on "Bright's Disease,"* p. 188.)

"The disease is essentially chronic from the commencement, and rarely, if ever, a sequel of an acute attack. Its commencement therefore is, as a rule, insidious, and in its early stages it is often unsuspected and latent." * *

"Dropsy rarely forms a prominent symptom, and in the majority of cases it is entirely absent." "In a large proportion of cases, the immediate cause of death is uræmia or cerebral hemorrhage."—(*Johnson on the "Red Granular Kidney."*)

"It is not unfrequently a result of, or, to say the least, it is often associated with, an excessive consumption of food and of alcoholic stimulants, with consequent dyspepsia. In cases thus originating, the approach of the disease is gradual, insidious, and often unsuspected until it has reached an advanced stage. The disease occurs at all ages, from infancy to extreme old age. I have seen it fatal at the age of seventy-five." "This form of disease has, as a rule, a more protracted course than any other form of Bright's disease, and for a period of years it may be unattended by any obvious symptoms, apart from the indications afforded by the urine.

"The urine, placed in a conical glass, may remain quite clear, and show no appearance of tube-casts or renal epithelium; or it may either occasionally or constantly deposit a light cloud, in which are found small hyaline casts, in some of which a few oil-globules may perhaps be seen, while others contain an epithelial cell or two, or some fragments of cells. This condition of urine may continue with little or no change for many months, and even for several years, before there is any indication that the general health is suffering from the state of the kidneys."—(*Johnson on "Large White Kidney."*)

"A copious flow of urine of pale color and of low specific gravity is one of the earliest and most common symptoms of this form of degeneration. The urine at first may contain no albumen," * * "may be clear and deposit no sediment; so that for days and even weeks together no tube-casts are visible, and in the earliest stages of the disease tube casts are never numerous. In most cases, however, a light cloud col-

lects at the bottom of the conical glass; and in this cloud we may find some small hyaline casts, some casts finely granular, and occasionally some hyaline casts containing oil, either in scattered globules or in cells."—(*Johnson on "Lardaceous or Waxy Kidney."*)

"The enlargement (of the kidney) in both these cases is exceedingly chronic, but we have not as yet, I think, accumulated sufficient evidence to enable us to state how long it will take to make either a large waxy or a large fatty kidney. My own experience would incline me to think it a matter of many months, and often of some years, before the deposit takes place to so great an extent as to interfere materially with the normal functions of the organ. Indeed, a considerable amount of deposit may exist in the kidney without greatly interfering with its functions. By and by, when you come to deal with patients in the wealthier classes of society, who are able to surround themselves with all the means and appliances which are essential to their comfort, and which aid much in counteracting or retarding the effects of disease, you will be more struck with the prolonged duration of these maladies, and the wonderful manner in which a fair enjoyment of life may be attained under a condition which produces a daily drain of albumen in greater or less quantity."—(*Todd's Clinical Lectures*, pp. 390–1.)

"The presence of large quantities of waste nitrogen in the blood maintains the kidneys in a state of high functional activity, and the hyperæmia of active function leads in time to the production of connective tissue in excess. Such is the origin of the majority of the cases of chronic renal disease; such, indeed, is the natural history of interstitial nephritis, of the contracting, granular, cirrhotic or gouty kidney. Long before the disturbance of balance betwixt the waste to be excreted and the power of the eliminating organs to excrete it is forced upon the attention, a silent, gradual process has been in action, slowly but steadily destroying the kidney, and rendering it less and less equal to the duties demanded of it. It is only when some of the evidences of imperfect depuration of the blood become manifest, that we rouse up to the consciousness that the kidneys are no longer in their structural integrity, and that a slow and insidious form of disease has been stealthily undermining them. Further, too, we must clearly recognize the fact that the excess of duty thrown upon the kidney—the direct cause of the tissue changes in it—is the result of indulgence in nitrogenized food beyond the absolute needs of tissue repair."—(*Fothergill.*)

If these very able physicians and pathologists, who have observed the disease in hospitals and studied it in the dead-house and elaborated their pathological theories in their studies, had followed the plain indication found in all the extracts I have read—namely, to have studied the kidneys in apparently healthy men (for they all agree that there is the origin and insidious stage of the disease)—they would have give us what is yet unwritten, the history of the origin and early progress of Bright's disease.

I have had an opportunity of making examinations of urine of ordinarily healthy persons in a considerable number of cases, and have found the hyaline casts under such circumstances and conditions that I have been led to believe that its persistent presence in the urine is a very early and significent indication of incipient Bright's disease, or at least

of conditions which, maintained, will lead to it. This hyaline cast is present with other forms of renal tube-casts in all the forms of established Bright's disease, acute and chronic. It also is found by itself, at times, in some of them.

I have also found it alone and without albumen in a few fatal cases of Bright's disease. These cases all gave no sign of the disease until near the final and fatal attack. I have found in microscopic examination of urine the hyaline cast, small or medium size, more or less transparent, homogeneous, or with few shining globules or nuclei, all other forms of renal tube-casts and albumen absent, and associated with one or more of the following conditions: with crystals of uric acid; crystals of oxalate of lime; other crystal and amorphous salts; passage of renal calculi; stricture and the urethral condition due to gleet, repeated or imperfectly cured gonorrhœa; enlarged prostate; valvular disease, or hypertrophy of heart; functional disorders of the liver, with clay-colored stools; dyspepsia; chronic diarrhœa; healthy persons who have recently been much with cases of scarlet fever (in four cases I have found hyaline casts associated with abundant bacteria); workmen in lead factory; during paroxysms of gout; paroxysms of dyspnœa; vertigo; decay; deterioration; decline of power, mental and muscular, a premature agency.

In a series of examinations of urine of persons in good apparent health, not selected, I have found the kidneys healthy:

In cases	276
Transparent casts with uric acid	5
" " " oxalate of lime	12
Urethral discharges, indicating stricture, gleet, or long-continued gonorrhœal inflammations	22
Urethral discharges, indicating enlarged prostate	1
" " " bacteria, after exposure to scarlet fever	4
After exposure with various conditions of dyspepsia, etc	44

CONCLUSIONS.

1. That an unknown, but certainly considerably large, proportion of deaths, recorded under the names of pneumonia, pleurisy, pericarditis, apoplexy, convulsions, chronic diarrhœa, etc., etc., have for their predisposing cause chronic Bright's disease, and that consequently the number of deaths recorded from Bright's disease gives no adequate idea of the prevalence of this disease.

2. That the advance of knowledge of the morbid changes in the kidney and the resulting contamination of the blood, and of the secondary affections so often the terminations, the final and fatal events of chronic

kidney disease, has made the field of renal pathology a very large and important portion of medicine.

3. That for practical clinical purposes the division of Bright's disease into two classes only—namely, acute and chronic—is most useful, and that for the present it is not desirable to attempt more refinements of diagnosis in general practice.

4. That the access of chronic Bright's disease is not marked or attended by any disturbances of ordinary health sufficient to direct the attention of the person affected to the organ, or to his condition, or to enable him to fix the date of its occurrence, and that the early progress of the disease is equally insidious and unrecognized.

5. That, consequently, the early history of chronic Bright's disease is hidden amidst those slight deviations and disturbances of general good health which we all accustom ourselves to submit to—to neglect —and to call ourselves "very well" withal.

6. So that observations of this stage of diseased kidney have not been made and the history has yet to be written.

7. That persons in good ordinary health must be made the subjects of observation.

8. That the appearance of albumen in the urine marks an advanced stage of chronic inflammation or degeneration of the kidney, but that the hyaline cast is a very early and important means of diagnosis, as early and significant in its relation to the kidney as the mucous râle is to the lung.

DISCUSSION.

Dr. S. G. Armor had listened with interest to the paper just read, hoping, from its title, that some new light would be thrown upon a subject hitherto involved in doubt. In this he had been disappointed. The symptomatology of the disease, so admirably condensed by the author, was simply bewildering. But this very confusion of testimony serves a good purpose: it clearly demonstates the fact that we have no reliable subjective symptoms of the early and more curable stages of the disease. Practically considered, then, Can we, to any extent, supplement this deficiency of knowledge? Can we get any practical hints from the study of general pathological laws? If we can, they will be our safer guides, for we have just seen how little reliance can be placed on the general symptomatology of the disease in its early or latent stages.

Since the days of Dr. Bright much prominence has been given to the presence of *albumen* in the urine, and I am confident the profession have

been misled by attaching too much importance to this one fact. As a single, disconnected fact, I need hardly say that it is of little pathological significance—certainly of little diagnostic value—for the reason that we find it present in a variety of morbid conditions, such as congestive malarious fevers, yellow fever, typhus, diphtheria, pneumonia, heart diseases—indeed, in all forms of disease in which there is venous congestion of the kidney. We study this as a general law, without reference to the varied forms of structural disease of the kidney itself.

Now this venous hyperæmia of the kidney not unfrequently arises from obstructions at a distant part of the body. From the relations of the liver to the venous abdominal circulation, that organ is often primarily involved in cases of albuminuria. Even functional disturbance of the liver gives rise to a sluggish condition of circulation in the abdominal viscera, which, sooner or later, communicates itself to the kidney. This is explained by the well-recognized physiological phenomenon—namely, "*that freedom of transit of blood through any part is, in a great measure, dependent upon the healthy performance of its functions*"—so that if the function is arrested, the circulating current is arrested also, and the blood reverts to intervening parts in the course of the circulation. This law of reversion is universal, and you can readily see the bearing of it upon the question of albuminuria. The kidneys partake, in greater or less degree, of this general venous hyperæmia, and, as a result, albumen slowly sweats its way through the congested vessels of the kidney into its tubules, and finally appears in the urine. Now, in such cases, if our minds, misled by the simple presence of albumen in the urine, are at once fixed upon primary kidney disease, we are not only in error as to our pathology, but, what is worse, we are in error as to our treatment. Our attention is directed to results rather than causes—to symptoms rather than states or conditions which produce these symptoms.

I need scarcely remark, in this connection, upon the intimate relation existing between venous hyperæmia of the kidney, and the various structural and degenerative conditions to which it is liable. This law is also universal. Chronic congestion on the venous side of the circulation tends, not to *true* hypertrophy, but to degenerative action. And just here we find ourselves treading upon the border territory between acute and chronic Bright's disease, and I need not remind you that it is controverted ground. Are they different stages or modifications of one disease, or are they essentially different affections? Upon this point eminent observers differ, and as long as they differ we shall have the most confused and contradictory statements as to the nature of the disease and its symptomatology. It cannot be otherwise, for we are still disputing as to what we shall call "Bright's disease of the kidney." Upon

this unsettled question, therefore, we may be allowed individuality of opinion.

That chronic degeneration of the kidney may result from chronic congestion, such as I have pointed out, is in harmony with the general and well accepted facts of pathology; and, on the other hand, that this degenerative condition may be a primary and independent affection is equally evident, for it is in accordance with what is observed in other organs of the body.

Then, according to this view, we must recognize distinct elements of causation—one *congestive* in its nature, the other *primarily degenerative.*

Now it is well known that *age* is an important factor in determining a degenerative result. In early life there is little tendency to the degenerations; they occur much more frequently in middle and advanced life, just the time at which Bright's disease is most apt to occur. Early life is remarkably exempt from it—that is, from the chronic varieties.

We have, then, thus far, it will be seen, two factors to consider in the study of albuminuria—namely, *chronic venous hyperæmia,* which tends to degenerative structural changes, and the tendency to degeneration growing out of AGE, independently of any vascular lesion. Either is sufficient of itself to give rise to those textural and degenerative changes which are known as "Bright's disease"; when combined, the probabilities of degenerative change become, of course, very strong, and especially if there be present a probable inherited *degenerative diathesis.*

That degenerative action of the kidney may be regarded, in many cases, at least, as a mere local manifestation of a general constitutional affection, is evident from the fact that other organs of the body are almost invariably found in the same degenerate condition, such as the heart, liver, spleen, arteries, etc.; and we can readily believe that certain conditions of body predispose to this general degeneration.

In presenting these views, Dr. Armor purposely omitted any reference to the special histological changes which have occupied so much the attention of writers and pathologists, or to the varied forms of tube-casts so fully discussed in the paper. He had sought rather, in the few remarks which he had made, to point out the somewhat popular error, not to say danger, of relying too much on the presence of *albumen* in the urine as a diagnostic test of Bright's disease. The tendency of such exclusive view is practically bad, for it diverts us from the primary elements of causation to those that are merely secondary and consequential.

In conclusion, he detailed, by way of illustration, several cases occurring in adult life in which a large amount of albumen was present in the urine, with the usual symptoms of Bright's disease, such as general ana-

sarca, pallor, puffiness of the eye-lids and face, loss of appetite, headache, and, in one case, repeated and severe convulsions. The general line of treatment was *eliminative* and *anti-congestive*. The patients were first put on broken doses of mercury, followed by the prolonged use of a solution of sulphate of magnesia and sulphate of iron, in doses sufficient to produce one or two full watery stools in twenty-four hours. Their loins were also thoroughly dry cupped on alternate days for months, and their skin kept warm and active by repeated hot vapor baths and flannels. When malarious influence was suspected, quinine was also freely administered. The cases reported made good recoveries, and remained well for years after the attack.

He did not, of course, claim that these were typical cases of chronic interstitial, fatty or amyloid degenerations of the kidney, with hyaline casts in the urine. If he had hastily inferred that they were from the mere presence of albumen, together with the somewhat characteristic symptoms enumerated, he would not have had the courage to submit them to the treatment he did, and the result might have been different.

PATHOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY.

Regular Meeting, March 8th, 1877.

The President, Dr. Rockwell, in the chair.

CROUP, TRACHEOTOMY, DEATH.

Dr. F. H. Stuart presented larynx and trachea with the following history: A boy, six years old, complained on February 23d of a dry cough, and had a few small whitish specks on his tonsils. On the 24th cough was bad and became worse till 10 A. M. of the 27th, when he died of apnœa.

On the 24th he was very ill and could not breathe easily, for which an emetic was given. On the 26th he vomited up a cast of the trachea, and repeated this the same evening.

The patient was first seen on the evening of the 26th at nine, when he had already coughed or vomited up *four* tubes. Tracheotomy was advised, and done that evening in presence of Drs. Westbrook and McCorkle. The operation relieved the dyspnœa, and he did well till next

morning, but exudation occurred below the incision, and he died as above stated.

At the autopsy the specimens presented were removing, showing croupous exudation lining trachea and bronchi to those of second order. It is easily peeled off, and does not appear diphtheritic. There were no *constitutional signs* of diphtheria. An ante-mortem heart-clot also existed.

Dr. Giberson did not think this case was non-diphtheritic. He had seen similar specimens from an undoubted case of diphtheria.

CARCINOMA OF LIVER.

Dr. J. C. Shaw presented specimens and the following history:

Mr. A., æt. 64, had peri-hepatitis four years ago, but felt well since till the summer of 1876, when he was pale, had no appetite, and had an uncomfortable sensation in the stomach.

In the fall was very weak from mal-nutrition, and in October vomiting set in. No tumor was perceptible, but he now had slight pain.

He gradually failed to his death in November, two weeks before which he vomited much blood.

At the autopsy, cancer of liver and pylorus was found, the liver and stomach firmly adherent, with an abscess cavity between them, from which an opening passed into cavity of stomach.

Dr. Segur exhibited Zentmeyer's "Centennial" microscope, after which the specimens were referred to the Microscopical Committee, and the Section adjourned. N. B. SIZER, *Secretary.*

——THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month at Everett Hall, 398 Fulton Street.

The October meeting will be held on the 16th, at which there will be presented the following papers:

Menière's Disease (with patient.) By Dr. J. C. Shaw.

Ascites in Children. By Dr. C. C. Jewett.

Report on Diphtheria. By Dr. E. N. Chapman.

Ἀσκληπιὸς ὁ Σωτὴρ

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυνάων.

Hymns of Homer, No. XVI.

ITEMS.

——Embalming.—Dr. Lowell, of this city, has devised a process of embalming bodies which bids fair to revolutionize the business of undertaking. If his plan shall be adopted and succeed, the use of the ice-box and other expensive appliances, generally in request for the preservation of cadavers by the agency of cold, will become entirely unnecessary, and will be superseded by an inexpensive and simple process, which we will briefly indicate as follows: A solution of chloride of zinc is the preservative fluid used; this is contained in a porcelain-lined vessel, which is elevated to a convenient height, so that the contents will be injected into the cadaver after the manner of a gravity-syringe. For the passage of the fluid from its receptacle into a vein of the cadaver, glass and rubber tubing are all that is required. A finely tapered glass tube is held tightly in place in the vein, while a glass U-shaped tube acts as a siphon to conduct fluid from the receptacle. The quantity of fluid will, of necessity, vary in different cases; four or five gallons may be required. This plan will not work when operations have been performed whereby large vessels have been opened. A body thus treated was transported from this city to Richmond, Va., this summer, without odor, and without disfigurement or any external signs of decay. All that is required is that the physician shall expose a vessel, adjust the glass tube, and the fluid will find its own way. Dr. Lowell has let the instrument run all night. There is promise in this of a saving to the city of Brooklyn alone of from $75,000 to $100,000 each year in the one item of ice, in addition to doing away with much unpleasant and cumbersome material in caring for the dead. Dr. Lowell writes: "The injection may be made by either artrey or vein. I have tried both with success. I prefer the brachial artery above the elbow as the point for introduction of glass

tube, for the primary incision is slighter, and consequently divides smaller and fewer veins than when I expose the femoral artery. I use the gravity method, and introduce about five gallons of the antiseptic fluid. The effects are eminently satisfactory. The color of the integument is improved, even at points where hypostasis has been at work. I inspected a cadaver night before last—a lady. The body was in splendid condition—skin white and clear, and all points of discoloration along spine, nates, posterior surface of thighs, neck, etc., etc., clearing up. The patient died of typhoid fever; post-mortem discoloration rapidly supervened, and decomposition was rife. All changes were arrested, the skin cleared up, and when I saw the body last, its appearance had improved wonderfully. I am constructing an apparatus on an improved plan for the work of injection, and will, in a few days, have it out." Dr. Lowell will shortly be ready to work his new appliance, and offers to inject any body submitted to him by the profession. He thinks this method will give better satisfaction than icing remains, and will certainly be antiseptic. He is ready to use and apply it where the undertaker has hitherto applied ice.

——New Clinical Thermometer.—A London optician has recently brought out a spiral thermometer, called the "Insulated Surface Thermometer." It is about the size of a silver half-dollar. It costs £2 10s. on the other side. See the *Lancet*, Aug. 11th.

——Pathological Section.—The Treasurer announces to the members of the Pathological Section that bills for dues, 1877, will be sent out during October by the authorized collector. Prompt settlement will be very acceptable.

——Uterine Elevator.—Attention is called to the advertisement in the present issue of Burrington's Uterine Elevator, which instrument admirably meets the indication of external support to the uterus.

——Parrish Hall.—By reference to advertisements it will be seen that an institution is to be opened in this city for the treatment of Opium Habitués. The details of the management will shortly be placed before the profession.

——Veratrum Viride in Puerperal Convulsions.—The editor of the *Va. Med. Monthly*, September, 1877, has done a very serviceable piece of work in collating from a variety of sources the recent experience of physicians in the above treatment. Among others reported by Southern and Western doctors, he refers to two successes by Dr. Whitehead, of Vicksburg, in *Trans. Miss. Med. Assn.*, 1877; several cases by

Drs. Southworth and Crosby, of Michigan, *Detroit Rev. of Med.*, September, 1876; one apparently moribund case restored, Dr. Ira Oatman, of Sacramento, *Trans. Cal. Med. Soc'y*, 1877, and several cases of Dr. T. D. Fitch, of Illinois. These latter are merely referred to in connection with the discussion before the American Medical Association, which followed some remarks by Dr. J. H. H. Burge upon cases treated in this city by Drs. Corey and Bunker; see *Transactions Am. Med. Assn.*, 1877, p. 240..... The editor does not refer to the ten or more successes previously fully reported in this section, *Am. Obstet. Jl.*, May, 1871, and *Med. Record*, March 16, 1874..... He cites two successful cases by Dr. Fordyce Barker, in *Buffalo Med Jl.*, March, 1877. These reports, concludes the editor, Dr. Landon B. Edwards, "are sufficient to lead to something like a scientific investigation of the subject. Numerous other reports have from time to time fallen under our notice, which might be collected to show the great value of the agent in puerperal convulsions. Some of the latest and best works on therapeutics do not allude to the use of Veratrum Viride in this affection."

——Prolonged Baths.—Although we are told by Hebra that the time during which one may remain in a warm bath without any harm to the natural functions may be lengthened up to months, it is interesting to know that, as early as the 15th and 16th centuries, a prolonged use of warm baths was quite the fashion. Fabricius Hildanus, a physician living in 1601 at Pfeffers (a thermal water of Switzerland), writes to his friend, Paulus Conquerus, that the duration of a bath should vary, some using it as long as two or three hours, others through day and night, and others, again, kept in water for seventeen days continuously. . . . As the arrangements at that time were not quite up to the present standard, it sometimes happened that very weak and exhausted patients fainted or fell over while asleep, and got drowned.—*Deutsche Medicin. Wochenschrift.*

R. H.

——John A. Brady died September 10th, in the 46th year of his age, at 16 Bedford Avenue. He was one of the most prominent and prosperous of the practitioners of the Eastern District of this city, wherein he had been a resident about twenty-five years. He was a graduate in medicine from the Vermont College, at Woodstock, in 1852; became a member of the County Society in 1858. At the time of his death he was consulting physician to the Kings County Hospital, and Trustee of the E. D. Hospital. This loss falls with greatest weight on his widow and six children. The cause of the death of Dr. Brady was peritonitis, superinduced by rupture of hepatic abscesses.

——*The Journal of Nervous and Mental Diseases* for July (Quarterly), Dr. J. S. Jewell, editor, contains a very full report of the discussions at

the last meeting of the American Neurological Association. Dr. J. C. Shaw, of this city, had two papers, on "Locomotor Ataxia in a child four years of age," and "Symptomatology of Brain Tumor." Dr. G. M. Beard had two papers, on "Endemic Tetanus on Long Island," and "The Influence of Mind in the Causation and Cure of Disease." The third of six conclusions in the latter article reads: "It is entirely possible that hydrophobia and tetanus may be brought on by mental causes, with all their distinctive symptoms, and that death may result through the emotions of fear and expectation alone." We give this in the words of the journal, for the reason that a misquotation has appeared in a recent newspaper article.

——Publications Received.—Transactions of College of Physicians, Philadelphia, 1877. New Series, Volume III.

Transactions of the Medical Association of Georgia: Atlanta, 1877. Sent by the President, Dr. Robert Battey.

Extirpation of functionally active Ovaries for the Remedy of otherwise Incurable Diseases. Reprint Gynecological Transactions, 1877. By Robert Battey, M.D., Rome, Ga.

Aiken as a Health Station. By W. H. Geddings, M.D., Aiken, S. C.

Hay Fever, or Pollen-poisoning. By Elias J. Marsh, M.D., Paterson, N. J.

Retarded Dilatation of the Os Uteri in Labor. By Albert H. Smith, M.D., of Philadelphia. (Reprint from *Medical and Surgical Reporter.*)

——The Hospital Gazette will hereafter be combined with the *Archives of Clinical Surgery*, as a monthly serial of 40 pages. Price, $1.50 per annum, including postage.

——The American Public Health Association holds its Fifth Annual Convention at Chicago, September 25th, Dr. John H. Rauch presiding.

——*The Encyclopædia Britannica.*—The ninth edition, American reprint, is in progress, J. M. Stoddart & Co., Philadelphia, publishers. Specimen pages of this valuable work may be seen at the rooms of this Society. This edition will contain 21 volumes of 800 pages each, abundantly illustrated on wood and steel; the cloth-bound set will be delivered at $5.00 a volume, about one-half the previous cost.

——*Memoranda of Skin Diseases*, by Drs. Piffard and Fox, of New York, is announced by Wm. Wood & Co.

——The Medical Intelligencer, of Lindsay & Blakiston, September, publishes a long list of books reduced in price, including several publications of J. and A. Churchill; *e. g.*, Carpenter's Physiology (8th English edition) at $5.50. It announces a continued series of guide-manuals for students and busy practitioners.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting, October 16, 1877.

MENIÈRE'S DISEASE.

BY J. C. SHAW, M.D.

In 1861 Menière called attention for the first time to a group of symptoms which he had observed in inmates of the Deaf and Dumb Institution, of which he was the Director. From previously well-known physiological experiments on animals, he was led to infer that these symptoms were the result of a lesion in the labyrinth. The patient which I desire to present to you suffers from these symptoms.

This disease has passed from the range of aural surgery into general medicine, and has recently occupied the attention of neurologists, for the reason of its implication of the auditory nerve, and from the very curious symptoms which are present, and which, to a great extent, simulate other lesions proper to the nervous apparatus; therefore it will not appear strange that I present to you such a case. The patient was kindly sent for my observation from the Brooklyn Eye and Ear Hospital.

I. W., male, aged 52, Scotland, ship rigger. Seen first August 21st, 1877.

For past eighteen years has had trouble with his head off and on, consisting of pain, quite severe, always worse at night; lumps made their appearance on different parts of his head and forehead; at times had dizziness. Has had many attacks of this kind during these years.

No very definite account of these attacks to be obtained. Says that he was once treated at the Sailors' Hospital with a white medicine, and got entirely better. Four or five years ago began to notice that he had slight difficulty in walking, staggered, had pain in head, and there was impairment of hearing on right side, with noise in the ear, like surf, sometimes like a locomotive hissing.

In January, 1877, marked symptoms presented themselves. One day at table had a dizzy attack so severe that he staggered very much, was in great danger of falling and became quite confused, but did not lose consciousness; had to be assisted to bed, on his reaching which he immediately began to vomit (never vomited before), and continued to vomit at intervals for a day, when it ceased. He was unable to leave his bed for about two months, he was so weak, and whenever he moved had dizzy attacks.

At the end of this time began to go about again, although the dizziness was as great.

Three or four weeks ago went on an excursion by boat, and when he came home he vomited, having been unusually dizzy during that day. Whenever he moved the vomiting continued at intervals until the next day. The vomiting did not come on at the same time that the dizziness began, but many hours after. There has been no vomiting since.

Examination.—Staggers very much whenever he walks or stands without support.

He says as soon as he rises to walk he begins to have a blurring and confusion of vision, which increases (the staggering also increasing), and becomes so great that he is almost entirely unable to see, and is obliged to hold on to the object nearest to him to prevent himself from falling; with a few minutes of rest he recovers, to have the same thing occur as soon as he starts to walk again.

Whenever he walks he is obliged to look straight ahead. If he turns his eyes to either side, he immediately becomes unable to continue his walking, and the staggering becomes much greater. Whenever any one comes towards him in the street, the staggering and confusion of vision becomes greater in his efforts not to run into them; the faster he walks, the worse he is. While sitting he is never dizzy, and feels as well as ever he did; when he stands and holds on to anything that supports him and keeps him steady, he is never dizzy; it only comes on when he is in motion. All these symptoms have been growing much worse for past few months. When he stands with his eyes shut, staggers. There appears to be no muscular paresis of upper or lower extremities, although he does not appear to be as strong in either arm as a man of his physique and occupation ought to be.

SENSIBILITY.—Some numb feeling in right palm, and in palm or surface of left thumb, but tactile sensibility not impaired. Has at times had twitching of both lower extremities (spinal epilepsy). Otoscopic examination, made for me carefully by Dr. Cornwell, the Interne of the Hospital, shows that the patient has been gradually growing deaf in A. D. for a year, the deafness being accompanied by a distressing tinnitus like the beating of surf.

Two months ago, A. S. became suddenly affected (inside of 24 hours); the deafness and noise has since remained unchanged. Hearing power, W. (watch) $\frac{0}{30}$ both V. A. D. 6″, A. S. 8′.

Tuning fork heard only on left side and not loud. When placed on right mastoid process, is heard only in A. S.

Pharynx healthy. Drumheads slightly cloudy and sunken; apex of triangular light spot only visible. Injection of vessels along handle of malleus on left side. Eustachian tubes open on both sides and respond to gentle Politzer. First trial, ophthalmoscopic examination made by myself, as well as Dr. Cornwell, shows no atrophy or choked disk, but floating bodies in the vitreous.

Dr. C.'s careful examination shows V. $\frac{20}{30}$, both myopic; astigmatism, $\frac{1}{48}$; axes, 90°; V. $\frac{20}{20}$. Has no urinary or rectal difficulty. When he moves his head from side to side quickly, he has the same symptoms of confusion of vision, etc., as when he walks, but not so great. Whenever he is in danger of falling, he has a tendency to fall to the left side (voluntary statement). Sleeps and eats well, and there are no other symptoms present. This case presents some symptoms which do not belong to Menière's disease, properly speaking; but we will return to this case further on, when I shall make a brief analysis of the symptoms. This single case gives but a one-sided picture of the various grouping of symptoms which constitute the complete clinical history of this curious disorder; to make a complete picture, I cannot do better than to give a few cases in brief representing the various groupings which may be met with.

A merchant, aged forty, previously well, fell suddenly while sitting in an arm-chair; became unconscious; his face was pale and covered with perspiration; the loss of consciousness was momentary, on recovering from which he had nausea and vomiting; everything about him seemed to be turning around; subsequently tinnitus and deafness.

A healthy coachman, aged thirty-eight, suddenly observed disturbance of vision, cloudiness of the visual field and a sensation of wavering of objects; no tinnitus; gait unsteady; eventually tinnitus and deafness.

A case recorded by Knapp.

A boy, aged nineteen; previous to ten years old, healthy at this age.

One morning was suddenly seized with an apoplectiform attack, had headache, was pale, and felt so dizzy he could not stand without assistance; had nausea, vomited repeatedly and fainted. All these symptoms succeeded each other in the course of five minutes, the whole attack lasting fifteen minutes; he recovered, but was quite hard of hearing.

One year after he again, one morning, without any apparent cause, had another apoplectiform attack similar to the previous one, which lasted a quarter of an hour.

A physician had observed that occasionally while walking or otherwise engaged, he would be suddenly seized with dizziness and fainting, and a feeling as if he were being whirled to the right. He never fell—always succeeded in catching hold of some object. During the attack, external objects seemed to be turning to the left. The vertiginous attacks coincided with a buzzing or ringing noise in left ear.

Tinnitus is present in all cases of Menière's disease with more or less intensity, and is described as a variety of sounds—hissing, buzzing, the noise of surf, discharge of musketry, etc.

Tinnitus is not always present at the beginning of an attack, but comes on and is always present at some period of the disease in the advanced stages of the disorder; when deafness becomes complete, the tinnitus usually ceases.

Vertigo is a symptom always present; in the large proportion of cases it is present only in paroxysms, and coincides with violent tinnitus. In my own patient the vertigo came on, as is usual, in a paroxysm, but now is present whenever he moves.

In a case related by Prof. Charcot, in his lectures on Diseases of the Nervous System, the patient had vertigo always, even when lying down; but which was made much worse by the slightest movement, either of the bed or the shaking of the floor as some one walked in the room. Vomiting or nausea occurs in most of the cases, and comes on with the paroxysms of tinnitus and vertigo.

The disorders of equilibrium are various. Some patients have a sensation of being turned to the right or left side; some feel as if they were being pitched forwards or backwards; some patients during the attacks fall and lose consciousness, and are not unfrequently taken for epileptics.

One patient I had the opportunity of seeing stated that he had a feeling as if something was going round in a spiral direction; when the apex of the spiral was reached, he would lose his balance and fall, if unable to grasp some object.

In a case of Prof. Charcot's the lesion affected principally the left ear; the direction of the reeling was principally forwards; sometimes it was

backwards, and occasionally there was a sense of rotation in the vertical axis, always from left to right.

The loss of equilibrium in my case is the most marked symptom, and is always present whenever he moves, which is usually not the case, the interference with equilibrium being only at the time of the paroxysm. There are certain functional disturbances of the labyrinth, which cause symptoms corresponding to those of Menière's disease. They may be caused by irritations in the cochlea; to impactions of wax pressing on the membrana tympani; to syringing the ear violently; to injections of caustic fluids in the middle ear. Brown-Sequard, in his lectures, speaks of the Duke of Wellington having been the subject of such a vertiginous attack from having a caustic solution injected into his ear by a quack.

And now we may ask, What is the explanation of these curious symptoms?

The experiments which led Menière to infer that these symptoms were due to a lesion in the semi-circular canals were first performed by Homens, and afterwards confirmed by Longet, Brown-Sequard and Vulpian. Homens found that when the membranous sacs contained in the osseous canals of the labyrinth were divided, very remarkable disorders of equilibrium occurred, which varied according to the canal divided.

When the horizontal canals are divided, rapid movements of the head from side to side in the horizontal plane takes place, and the animal tends to spin round in a vertical axis. When the posterior or inferior vertical canals are divided, the head is moved rapidly backwards or forwards, and the animal tends to execute a backward somersault head over heels; when the superior vertical canals are divided, the head is moved rapidly forwards and backwards, and the animal tends to execute a forward somersault heels over head. When all the canals are divided, the most complicated disorders of equilibrium occur.

The disorder of equilibrium in this disease is such a very prominent symptom, and in my patient unusually so, that it is worth while to stop for a minute and consider what goes to constitute the mechanism of equilibrium.

How is it that we are able to appreciate the least alteration in the position of our bodies. We all know the rapid movements that are made to restore the equilibrium when one is about to fall, movements which are too rapid to have been guided by consciousness. The apparatus of equilibrium, if I may so speak of it, consists: 1. In an afferent or sensory apparatus, with its terminal apparatus for the reception of impressions; 2. Visual impressions; 3. Labyrinthine impressions; 4. Muscular sense; all having their co-ordinating centre in the mesencephalon and cerebellum.

I have included in this apparatus a muscular sense, on the existence of which there has been a great deal of dispute, but for reasons which time will not permit me to give here. I am a believer in a muscular sense. I do not mean to imply by this that consciousness has necessarily anything to do with it; but rather a power possessed by either the gray matter of the spinal cord or some part of the mesencephalon, of appreciating and directing the position and tension of our muscles—a sensori-motor function.

Disorder in any part of this apparatus gives rise to disturbances of equilibrium. As instances of disorder in different parts of this apparatus, we have the disease known as locomotor ataxia, where, from a lesion in the posterior columns of the spinal cord, we have interference with the transmission of tactile impressions and the muscular sense.

In paralysis of an eye muscle, if the patient be told to close the sound eye and walk, there is produced disorder of equilibrium consequent upon disorder of visual impressions. The disorder of labyrinthine impressions is the main consideration of this paper. It is to be observed, however, that there is a difference between the degree of disorder of equilibrium, according to the part of the apparatus impaired. In locomotor ataxia we find that the visual impressions largely compensate for the loss of the tactile and muscular sense; the patient is able to walk very well as long as he can observe his extremities.

It is with loss of labyrinthine impressions that we have the greatest amount of disorder, and to the consideration of which we will return. Recently these disorders have been made the subject of extensive and careful study by Goltz, Mach, Breuer and Crum-Brown, and which have thrown much light on the subject.

Pigeons in whom the semi-circular canals have been divided on both sides never recover the power of equilibration; and it is worthy of recollection that pigeons in whom the semi-circular canals of only one side were divided, did not have permanent loss of equilibrium. It was also determined by Homens and confirmed by Goltz, that the nerve receiving labyrinthine impressions is not the nerve for the reception of aërial vibrations. Destruction of the semi-circular canals did not impair hearing, whilst destruction of the cochlea produced deafness, but not disorders of equilibrium.

The membranous canals are filled with fluid called the endolymph, and float in their osseous canals in a fluid called the perilymph. Each canal has at one end an ampulla, and it is to these ampulla that are distributed the vestibular branch of the auditory nerve. Very ingenious experiments have been performed by Goltz and Crum-Brown in their investi-

gations on the functions of these canals. The conclusions arrived at by them are almost identical.

Crum-Brown believes that there is a sense of rotation distinct from all other senses. By this sense we are able to determine, 1st. The axis around which rotation of the head takes place; 2d. The direction of rotation; 3d. Its rate.

Ordinarily we do not depend upon this sense, but make use of visual and tactile impressions.

The experiment performed by Crum-Brown is as follows: A stool is placed in the centre of a table, capable of rotating smoothly about a vertical axis. Upon this the experimenter sat, his eyes being bandaged; an assistant then turns the table as smoothly as possible through an angle of the sense and extent of which the experimenter had not been informed. It was found that he was still able to determine the sense and extent of the angle of rotation. If the rotation is stopped, the individual feels as if he were being whirled round in the opposite direction. If the eyes be opened, the disorder between the labyrinthine and visual impressions generates a distressing feeling of vertigo. The feeling of vertigo or giddiness is also experienced if, while the complementary rotation is going on, the head is moved so that the axis of the rotation is no longer vertical.

The impression of rotation is generated by the fact that rotation in an axis perpendicular to the plane of any of the canals causes the endolymph, on account of its inertia and friction, to press on and irritate the ampullary nerves in a reverse direction to that of the rotation. This gradually subsides as the motion of the canal and its contents become equalized, and ceases altogether when equalization is complete.

If, now, the rotation be stopped, the fluid continues to move on as before in the direction communicated to it, and so generates a sense of rotation in the opposite direction, which also ceases when the fluid comes to a stand-still. Prof. Crum-Brown explains the above phenomena in the following manner:

Each canal has an ampulla at one end only, and there is thus a physical difference between rotation with the ampulla first and the rotation with the ampulla last, and we can easily suppose the action to be such, that only one of these rotations (say with the ampulla first, in which case of course there is a flow from the ampulla into the canal) will affect the nerve terminations at all.

One canal can therefore, on this supposition, be affected by, and transmit the sensation of rotation *about one axis, in one direction* only, and for complete perception of rotation in any direction about any axis, six semi-circular canals are required in three pairs, each pair having its two

canals parallel (or in the same plane), and with their ampulla turned opposite ways; each pair would thus be sensitive to any rotation about a line at right angles to its plane or planes, the one canal being influenced by rotation in one direction, the other by rotation in the opposite direction. Now we have six semi-circular canals, three in one ear and three in the other, and I find, in all the animals I have examined, that the exterior canal of one ear is very nearly in the same plane as that of the other, while the superior canal of one ear is nearly parallel to the posterior canal of the other. In each ear there is one canal (the exterior) in a plane at right angles to the mesial line, and two other canals (the superior and posterior) in planes equally inclined to the mesial line. We have here a very delicate apparatus for regulating impressions caused by various bodily positions, and for the purpose of indicating appropriate movements for maintaining the equilibrium, which require to be adjusted too rapidly for consciousness to take cognizance of and direct them.

From what has been said, it is not difficult to account for the most prominent symptoms in this disease. There are, however, a few peculiarities which my patient presents which deserve a brief analysis. The rule is to have vertigo coinciding with the paroxysmal tinnitus, and nausea or vomiting. At a certain stage he had these symptoms in their characteristic form; but now he has vertigo and loss of equilibrium whenever he moves. Why? It will be remembered that in animals, when only one set of semi-circular canals were injured, after a time the other set either took on a compensatory action or the organism became used to the change, for the symptoms disappeared; when both sets were injured, the disorder of equilibrium persisted.

In this man both sets of semi-circular canals are diseased, explaining the persistent disorder of equilibrium. The faster he walks, the more aggravated his symptoms become, owing to the greater disturbance of the labyrinthine fluid; this condition is just the reverse of that in locomotor ataxia, where the faster the patient walks, the better and steadier he can walk.

He says that whenever he is walking straight ahead, if he looks to either side his vertigo and disorder of equilibrium become very great. I am inclined to think that whenever he looks to one side he also turns his head, and in that way gives a still additional alteration to the state of the labyrinthine fluid, which makes the already existing confusion still greater; it is quite possible, however, that this increase of symptoms may be present when he does not move his head, but only his eyes, as this very alteration of the position of the eyes may make the disorder of equilibrium greater, as we know that the disorder of equilibrium is very

largely due to the discord between the correlation of the visual and labyrinthine impressions.

It is quite clear in this case, from the loss of impressions to aërial vibrations, that the cochlea must be the seat of lesion, as well as the semi-circular canals.

Knapp lays great stress upon the alteration, in these cases, of the power of detecting certain musical sounds. The twitching of the legs which this man has suffered from, and the numb feeling in his hands, do not belong to the lesion of the labyrinth, but are due to a commencing lesion of some kind in the spinal cord.

The existence of vomiting in these cases has led to ingenious theories to explain its connection. It is supposed by Hughlings Jackson, from the known proximity of the nucleus of the vagus and auditory nerves, that in some way the disturbance is propagated to the pneumogastric.

Ferrier, however, appears inclined to think that possibly the pneumogastric has some part to play in equilibrium, at least in animals, for he says that it is a well-known fact that in the Felida, who have such exquisite powers of equilibration and co-ordination of movements, have large numbers of Pacinian corpuscles in their mesenteric plexuses. These corpuscles are also found in man, but to a much less extent, and it would appear probable that these bodies are for the purpose of conveying to the encephalic centres the condition of pressure in the viscera. This view of the office of the Pacinian corpuscles in the mesenteric plexuses is a very ingenious one and appears very plausible. Whoever has examined these bodies in cats must certainly have been struck with their enormous size, and wondered what possible office such powerful sensory terminal apparatus can have to perform in the abdominal cavity of a cat.

The vertigo, which is dependent upon a distressing form of dyspepsia, is well known to all of us, and according to this view, would appear to be brought about by the irritation of the terminal ends of the pneumogastric, causing disorder in the centres on the medulla, rather than to alterations in the circulation, as is usually supposed.

There are many disorders and irritations of the abdominal viscera which produce vertigo, but which cannot be considered here.

Pathology.—A few post-mortems are recorded. In these, disease of the membranous labyrinth was found of an inflammatory nature. We are, however, able, in a number of cases, to make a provisional pathological diagnosis, as it appears very probable that we may have these symptoms produced by;

Hemorrhage into the semi-circular canals, one or both.

Meningitis, due to extension from a basal meningitis.

Fractures of the temporal bone through the petrous portion.

Syphilitic Disease.

Acute and chronic inflammation of the membranous canals, and lesions of the auditory nerve itself, in its passage through the cranial cavity, or even possibly from a lesion in its nucleus.

And those causes which I have already enumerated, which cause functional disorder from their proximity to the semi-circular canals, or from producing sudden alteration in the state of the labyrinthine fluid or alterations in the blood pressure.

TREATMENT.—Charcot has used very large doses of quinia in these cases with good effect, giving it until the tinnitus was temporarily made worse. Weir Mitchell has also had amelioration of the symptoms from its use.

Seguin has had marked improvement from the use of the actual cautery to the mastoid, and the internal administration of ergot and bromide of potash.

My own case has, so far, been very considerably improved from the internal use of the fluid extract of ergot and iodide of potassium.

ASCITES IN CHILDREN.

BY C. C. JEWETT, M.D.

I would premise with the statement, that the case I am about to report was under my direct care but a short time, and that much information concerning it is derived from letters written me at the time by Dr. Bellows, of Norwich, N. Y., the family physician, with whom I was consulting both before and after the child came under my immediate attention, and by the mother, who kept a daily record of the condition of the little patient, for the instruction of the physician in attendance. This diary also has been of great service in completing the history of the case, by supplementing my own notes and the communications received.

Feb. 19th, 1872, first came under my observation Annie, aged six years, a child whom I had previously known of good constitution and healthy stock.

The mother reports, the child never had any previous illness save occasionally slight attacks of indigestion, to which she had been subject from early infancy, not more severe, however, than the mother had frequently noticed in the children of her own mother's family, and appearing like those troubles usually ascribed to worms. A little extra care in regard to her diet was necessitated in consequence thereof. A few weeks before the commencement of the present malady, she was slightly ill for a day or two. Scarlatina was prevailing in the neighborhood, and it occurred to the parents

that she had been exposed to it, but no evidence of the disease could be observed about her, and after having had a slight attack, similar to her accustomed ones, of indigestion, she was in her usual health.

On Christmas eve she attended a children's party, and on going to bed at night complained that "her stomach felt so tight." This was the first intimation of any trouble. Dr. Bellows was called the next morning and treatment commenced. A summary of his letters to me supplies the following history:

When first called, found an enlarged abdomen, distinct fluctuation, urine normal except in quantity, there being only from one to two gills secreted during the twenty-four hours. Treatment was commenced by giving calomel, powdered squill and digitalis, of each one grain, repeated every eight hours until free catharsis, followed by nitrate of potash and tincture of digitalis for ten or twelve days, then by substituting acetate of potash for nitrate, with tincture of colchicum—the bowels being kept open by the compound jalap powder, and the abdomen painted every other night with tincture of iodine.

This treatment was continued for about four weeks. During all this time there was a steady increase of the size of the abdomen, by measurement, no impression whatever made upon the kidneys, but great relief following each administration of the purgative powder. At the expiration of this time the abdomen had become so distended as to interfere seriously with respiration. It was decided to try and give temporary relief by tapping. January 21st paracentesis was performed, and between two and three quarts of a light straw-colored fluid drawn off. Diuretics were continued, one of which, the apocynum cannabinum, given in form of the fluid extract, in doses running from five to fifteen drops every three hours for two weeks, had no other effect than to cause nausea and vomiting. Three weeks from the time of tapping the patient measured as much lacking one inch as before the operation, and commenced to complain again of difficulty in breathing, which brings us down to within a few days of the present date (February 19th).

Present condition: appearance not markedly changed from what it was formerly, except in her form; is a little pallid, but bright and playful; appetite good; tongue clean and moist; bowels constipated; pulse, 100; temperature, 99; skin natural; abdomen tense; fluctuation evident; measurement over the umbilicus, which is prominent, twenty-nine inches; no evidence of disease of the heart or lungs; no fullness of the superficial abdominal veins, or sensitiveness of the abdomen under pressure. Urine scanty; quantity not given. On examination, odor ammoniacal; reaction acid; specific gravity 1031; no albumen; no sugar; a slight flocculent cloud is the only departure from natural in the general appearance. Microscopic examination negative in results, the only thing observed being a few epithelial cells.

Tr. scillæ, aceti colchici, each 2 drachms; spt. etheris nit., 1 ounce; ext. elaterii, 1 grain. Mix. S. Twenty drops every hour.

To drink of cream of tartar water freely, to continue the compound jalap powder, a bandage to the abdomen during the day, and stupes of infusion of digitalis at night.

MARCH 1ST.—General condition has not changed during the last ten days. Measurement of abdomen, 28 inches; urine, 16 oz. in the twenty-four hours; reaction acid, specific gravity, 1014; opalescent on addition of nitric acid or boiling; no microscopic evidences. Movements from the bowels every other day by the powder before mentioned, and generally followed by a reduction in the size of the abdomen of from one to two inches. To-day they present a clay-colored appearance, and there is derangement of the digestion and tympanites. The quantity of urine, on days when it could be estimated, has varied from 12 to 20 oz. Prescription to be continued, and to take

powders of ½ gr. of calomel, with sugar of milk, three times a day, until the character of the alvine evacuations is improved. Also, by advice of Dr. John G. Metcalf, to drink freely of an infusion of achillea millefolium.

MARCH 5TH.—Patient, during this period, has seemed somewhat improved. Has been at most times bright and active, and, in the main, has passed comfortable nights. Appetite and digestion good; urine varying from 14 to 20 oz. a day; measurement ranging from 26 to 28½ inches. Treatment continued.

MARCH 25TH.—Since the last report, her course has been constantly downward. There has been a steady increase in size since the 17th inst., it having been but twice down to 29½ inches (the same as when tapped); all the rest of the time 30 and even 31¾ inches. The quantity of urine has diminished to an amount varying from 8 to 10 oz. daily. Strength has been failing. Has been animated and active at times, but has soon settled back into a weary and listless manner; has wished to be carried about the house; sleep has been disturbed at night; moaning and sometimes fever in sleep; digestion and appetite poor. The stools have been occasionally clay-colored, at times greenish, with much flatulence. Diet has been plain and nutritious, being constantly varied to suit the patient's whims, or to give an agreeable surprise.

APRIL 1ST.—After nearly two weeks of steady aggravation of distressing symptoms, and during the whole of the time great oppression in breathing, latterly embarrassed almost to suffocation, it is decided that tapping is imperative.

APRIL 3D.—Paracentesis has been performed, and about six quarts of serum, of the same character as before, removed. Patient bears the operation well. An examination of the abdomen reveals numerous enlarged glands, from the size of a filbert to one in the right groin the size of a hen's egg.

APRIL 4TH.—Measurement, 25 inches. Has passed 10 oz. urine. Is sitting up, and walking a little.

APRIL 5TH.—General condition good.

APRIL 6TH.—Measurement, 27 inches; urine, 8 oz. Complains of violent headache. Had an involuntary discharge from bowels during sleep; appetite poor.

APRIL 7TH AND 8TH.—Measurement the same; urine, 11 oz. and 7 oz.; violent headache; high fever; eyes swollen; face pallid and blotched with spots.

APRIL 9TH.—Measurement, 29½ inches; urine, 8 oz.; fever less; oppression in breathing.

APRIL 10TH.—Measurement, 29½ inches; urine, 9 oz.; fever; rapid and oppressed breathing.

APRIL 11TH.—Measurement, 30½ inches; urine, 6¾ oz.; fever and oppressed breathing continue.

APRIL 12TH.—Measurement and general condition the same; urine, 8 oz.

APRIL 14TH.—Measurement, 32 inches; urine, 9 oz.; fever and increased difficulty in respiration, with general distress.

APRIL 18TH, fifteen days from the time of the second operation, tapping was again performed by Drs. Bellows and McFarland, of Norwich. Her condition seemed hopeless at this time. She was considerably emaciated, pulse was feeble; headache and sleeplessness had been persistent for a few days; the difficulty in breathing was very great, and there was nausea and vomiting. Rallied and was more comfortable after the operation; slept two hours and then ate with a relish. After a few days of comparative comfort, the abdomen again commenced to enlarge; May 30th it measured 34 inches, and June 8th 35¾ inches.

Her condition at this time is thus described by her mother: Urine, 8 oz. in last twenty-four hours; movements of bowels rather loose, ashy in color; appetite gnawing

and craving. She constantly wants something, not knowing what. She has a hectic flush in the evening, and is easily wearied; her nights are disturbed.

The record for the next month shows that the patient was given over, and all treatment dropped, as was supposed, forever. There were the same variations in comfort as before, and a continuance of a fierce, canine appetite. Her appetites were gratified, and special care was paid to observe any fantastic wish, lest it might be a voice of nature betraying some want of the system. She ate enormously of cold roast beef and large quantities of ice-cream each day. Some time during this month she went into the hands of a homœopathic physician.

About July 12th improvement commenced in all her symptoms; in September convalescence was established, and completed in a few months. Her mother, in reply to a question of mine as to what seemed more particularly beneficial in effecting her cure, writes as follows: "I don't think that any particular treatment had any effect on her, but the change occurred at the time of her drinking very copiously of perry. She drank very largely of this one day, and could not be restrained until she had taken a whole bottle. After this her appetite became more natural. In looking back, I have always considered this as the turning point of the disease."

During the treatment of this case, in addition to the diuretics mentioned, there were given iodide of potassium, minute doses of the bichloride of mercury, tincture of the muriate of iron, infusion of parsley root and of broom—likewise pississewa; inunctions with cod-liver oil were also made. None of the diuretics produced any good results. The compound jalap powder, and the occasional small doses of calomel, by causing free catharsis, gave the most relief. Unless we ascribe some virtue to the perry, the credit of the cure seems due solely to the recuperative power of nature. It was from this power alone that any hope was derived from an early period in the disease, and to reinforce this, steady and continuous efforts were made throughout to invigorate the system and keep up the general health by tonics, a nutritious diet and an abundance of open air.

This case, in its progress, presented many points of difficulty and of interesting inquiry.

First. What was the cause of the ascites, and the prognosis deduced therefrom?

The strong constitution of the child and uniformly good health, save only in considerable digestive troubles, the slight sickness in December of a few hours, apparently in no way different from, or more severe than former ones, but soon followed by evidences of effusion, at first led to the following supposition: that there was subacute inflammatory action, commencing in the mucous membrane of the alimentary canal, and that this inflammation had passed gradually to the peritoneal covering of the bowels. The prevalence of scarlatina in the neighborhood raised a suspicion of suppressed scarlet fever, but persistent failure to find anything abnormal in the urine silenced this doubt. The absence of any history of tubercle in the family, and of cachexia in the child, debarred a diagnosis of tubercular inflammation of the mesenteric glands.

With this view of the case, and from the fact that the second stage of

inflammation had arrived after a first so short and mild as to pass almost unobserved, the prognosis was favorable.

As weeks passed without improvement, and more particularly, as after the removal of the fluid effusion steadily continued, indicating that the active cause remained, doubts could not not be entirely overcome whether the slight flocculence at times apparent in the urine was merely accidental. The frequent occurrence of clay-colored stools seemed to show that the liver was having some share in the disturbance; yet there was no jaundice, or evidence of retarded portal circulation, as indicated by an engorgement of the superficial abdominal veins. The recognition of enlarged glands after the second operation rendered the prognosis decidedly unfavorable, whether in view of their tubercular origin, or of the fact of their pressing upon and obstructing the abdominal vessels.

Second. The question of paracentesis was one that gave rise to much deliberation and many counsels. Was it safe? Was it advisable? The only medical writers who have anything to say on the subject, condemn it as a last resource. Of the physicians advised with, only one, Dr. John G. Metcalf, had seen a case of acute ascites unattended with other dropsies, which case recovered in between two and three months without an operation.

Of course there is no reason to hesitate to employ tapping as a last resource; but how can we always know that to be the condition? In this case life was considered to be imperiled by suffocation when the abdomen measured 29½ inches. Still the child lived along through weeks, when the measurement was in the thirties (the highest being 35¾ inches), when, from the fact of her case being given up entirely, nothing was done—from which condition she recovered without an operation.

There was another element to be considered in regard to an operation. Does tapping, by removing the pressure, give a better opportunity for the absorbents to act on the remedies given?

We find in scientific treatises but few details of ascites in children. The ascites which results from cardiac or renal disease is usually part of a general dropsy, to which the child as well as the adult is liable. We also have ascites with tubercular or non-tubercular peritonitis. These need not detain us. But there is another class of cases not referable to either of the causes mentioned—the *Ascite Primitive* of Barthez and Rilliet, concerning which little is said in medical literature. I will quote, from the few authors who have treated this subject, what particularly relates to our present purpose.

* Barthez and Rilliet say of primary ascites, "This form is very rare, if

* Maladies Des Enfants, par E. Barthez et F. Rilliet.

we credit our own observations, which have been pretty numerous. We have only had two examples of it. In the one the disease commenced with slight and general pains in the belly. Then there came on swelling of the abdomen. There was tension, fluctuation, and all the signs of ascites. The fever, light at the commencement, was nothing at the end of a few days. The belly became less tense after the 26th day, and the child was cured by the 48th."

In the second case the march was analogous, but several other dropsies were developed simultaneously.

Dr. Wolff, a German physician, has published a treatise on this subject, which claims that serous effusion into the peritoneum primarily is a frequent disease with children, and constitutes an affection whose physiognomy is entirely distinct, and one that has not sufficiently attracted the attention of practitioners. He affirms that he has observed more than a hundred cases of this disease in the space of six years' time. His description of it is as follows: This disease manifests itself generally in children of from 4 to 5, rarely from 7 to 14 years of age. The first period is characterized by paleness of the countenance, torpor, peevishness, fugitive pains in the belly, and irregularity of the appetite and of the alvine evacuations. Worms are often regarded as the remote cause of the trouble. These symptoms become aggravated, and the malady passes to its second period. When anthelmintics have not been given, this transition takes place gently. The pains diminish and the abdomen swells. With irritable subjects the first period and its passage to the second is sometimes very stormy, and calm appears after five or six days, when serous exudation has taken place in the abdomen.

Barthez and Rilliet remark in regard to this treatise, that it is "too incomplete to carry conviction," and, in criticism of an extract which they give, say: "We fear that there exists here some error of diagnosis; for while, on the one side, the author affirms that fluctuation was not doubtful, on the other he says that the mesenteric glands were swollen. But we ask, How could he assure himself of it, since he afterwards avows that he did not make a single autopsy?"

I should add that the secondary ascites of Barthez and Rilliet presents itself under two forms: the one acute, sthenic, of rapid course, resembling certain cases of peritonitis; the other chronic or cachectic, passive and apyretic. Hillier,* the only English author that I have been able to find who speaks of this disease, says that among the least common diseases of children may be classed ascites, and reports four cases.

In the first, a boy about 3 years, 3 months of age, the diagnosis was

* Diseases of Children. A Clinical Treatise based on lectures delivered at the Hospital for Sick Children, London, by Thos. Hillier, M.D.

tubercular deposit in the bronchial glands and in the upper part of both lungs, with enlargement of the liver. The explanation given by Hillier of the ascites was enlarged glands pressing on the *vena portæ*.

In the second, aged 2½ years, the ascites came on in an apparently healthy boy without any other symptom than constipation, and two or three slight attacks of sickness. The abdomen attained a measurement at its maximum of 26½ inches. After about two months, he had an attack of whooping-cough and was much better of dropsy, the fluid being almost entirely absorbed. A second attack, in which the abdomen reached the measurement of 28 inches, attended with a little general bronchitis and slight dullness on percussion over the back of the right lung, was entirely cured by an attack of scarlatina.

In the third, a boy 4½ years old, the *post-mortem* examination revealed cirrhosis of the liver, the pericardium universally adherent to the heart, and effusion into the right pleura. This last took place only during the last week of life.

In the fourth, a boy ten years old, the superficial abdominal veins were enlarged, and there was jaundice and clay-colored stools. At the age of 2½ years, he had jaundice and an enlarged abdomen, which lasted about two months, after which he recovered, and there had been no return of the trouble until the present. He remained in the hospital only about six weeks, and left in an improved condition.

In conclusion, I will quote some opinions of Hillier which seem appropriate to the elucidation of these obscure cases of ascites. He believes them due to "obstruction in the venous system," "probably in the trunks of the *vena portæ*, or it may be in the larger branches of the hepatic vein, near their entry into the *vena cava*," and mentions as "among conceivable causes of such obstruction, thrombosis in the course of the veins, plastic exudation narrowing them, or an enlarged gland or tumor pressing upon them." He also says, "there is one cause of ascites, met with in adults, which, I have reason to believe, sometimes occurs in children—namely, adhesive inflammation of the hepatic veins. This usually begins with inflammation of the capsule of the liver, and gives rise to a lobulated condition of the liver, which has been mistaken for true cirrhosis." And again, "since there are free openings between the cavity of the peritoneum and the lymphatic vessels, obstruction of the thoracic duct, or of the lymphatic glands connected with the lymphatics of the peritoneum, might cause effusion into that cavity."

DISCUSSION.

——Dr. A. Haslett.—In March, four years ago, I was called to see a little girl of eight years, who complained of a violent pain in the right

lumbar region, which prevented her sleeping or eating. She had been subject to attacks of articular rheumatism, having, as far as the history could be got, gone through with a very severe one about a month before. I could detect no local cause for the pain in the abdomen, but as there were murmurs with both sounds of the heart and a greatly extended cardiac area of dullness, I considered the pain as one of those often caused in distant parts of the chest and abdomen by advanced and extensive heart disease.

The great extent of dullness over the cardiac region I considered due to unabsorbed effusion into the pericardium. This proved afterwards not to be the case.

I quieted the pain with opium, and ordered cathartics and diuretics, in the hope of diminishing the amount of fluid in the pericardial sac. There was no œdema of the extremities, and I could not satisfy myself that there was any ascites. Under treatment the child found some relief—so much so, that although the prognosis was of the worst, and the miserable poverty of the family formed an additional obstacle to recovery, in that there was no possibility of proper nourishment, I hoped that that attack, at least, might pass over. But a week later there was a relapse to even a worse condition of agony than that existing when I had first seen her. I asked Dr. Jewett to see her with me, and we made an engagement for the following morning; during the night she died. We made a post-mortem, and found no pericardial effusion. The mitral and aortic valves were much deformed, and the heart enormously hypertrophied, with the two surfaces of the pericardium adherent throughout—not a point where they could be separated. The abdomen was full of water, and I cannot but think that the intense pain was due to the great distension, which yet was not visible nor appreciable to palpation, while percussion gave a doubtful, if not negative, result. With the ill-success that has attended tapping in children, it would have been venturesome, even if the diagnosis of ascites had been much clearer than it was, to tap this child, and of course the relief, considering the condition of the heart, would have been but temporary; but I have ever since felt that the child's sufferings would have justified the operation.

ALCOHOL AND DIPHTHERIA.

BY E. N. CHAPMAN, M.D.

The re-appearance of diphtheria, the winter of '73 and '74, in an epidemic form and with its old-time fatality, excited great apprehension in the community, and much discussion in the profession. Eventually, as the disease extended in area and increased in severity, a meeting of this Society was called to consider the subject, and interchange views as to the means the best fitted to meet and repulse the enemy. At that meeting I had the honor to open the debate on the treatment. My opinions, markedly divergent from those expressed by others—opinions published as early as '63 in the *Boston Medical and Surgical Journal*—failed of acceptance, met with adverse criticism, and fell to the level of all clinical facts in the face of rational medicine. How preposterous for one man to pit a few empirical observations of his against doctrines settled as long ago as the days of Cullen! What! is the contest to be fought over again with a modern John Brown? Is the caution to avoid stimulants in fever and inflammation to be cast to the winds? It is contrary to reason and common sense. Such a practice, surely, would but add fuel to the flames. Moreover, the claim of nineteen recoveries in twenty consecutive cases, as reported in the Boston *Journal*, is easily explained: a physician often has a run of mild cases, a fact notably observable in scarlatina.

The object of this paper is to present additional and more decisive clinical data, such as it will be difficult to explain away, or otherwise account for than by conceding a direct and positive antagonism between alcohol and diphtheria. I am now prepared not only to repeat the assertion, formerly made to this Society, that a physician, when called early, ought not to lose more than one in twenty cases—but also to announce the still more startling fact that double, yea! quadruple that number has since then been, consecutively, brought to a successful issue. In fact, diphtheria is, when attacked boldly at the outset, more amenable to treatment than many common diseases; and yet the fatality under prevalent modes of practice is as great, almost, as that of unmodified small-pox.

I propose calling your attention to the subject before us this evening under the following heads:

1st. The pathology and treatment.
2d. The histories of typical cases.
3d. The reports of cases, and the certificates of deaths.
4th. The preventive measures.

I. THE PATHOLOGY AND TREATMENT.

My views on the pathology and treatment of diphtheria, inasmuch as they have hitherto been presented to the Society, I will simply recapitulate in an abstract form: Diphtheria first appeared in this country in the year 1858. Its essential features are totally distinct from those characterizing all previous throat-distempers. The remote cause of the disease may be the multiplication of germs, animal or vegetable, on an abraded point in the fauces, and their transit thence through the lymphatics and blood-vessels to every part of the body. Its clinical history, however, better accords with the action of some subtle agency, which, pervading the air universally, impairs the vital status of the circulation through the lungs. In an epidemic all are affected by the morbific agent; but a few only yield to it. Mature, vigorous persons have vitality enough to resist the disease. Children and weakly adults are its usual subjects.

To this general and predisposing cause there is, almost always, superadded a local and direct exciting cause, such as defective exercise, improper diet, dark rooms, damp houses, imperfect ventilation, and poisonous emanations from decomposing filth in privies, cesspools, sewer-pipes, etc. To such agencies the strongest constitution will soon succumb.

The blood being deteriorated, its crasis is impaired and its vitality lowered; and then the sympathetic nerves, failing to receive due stimulus, waver in their efforts to carry on the animal functions. Thus the main spring of life loses the tension that keeps the whole mechanism in motion.

The exudation is a symptom only, a sign of the degeneration of the blood and the semi-paralysis of the sympathetic nerves. The exudation may be slight, or even absent altogether, and yet the most serious sequelæ supervene.

All local treatment is worse than useless. It exhausts the nerve-force and induces greater injection of the blood-vessels, thus favoring the exudation.

Alcohol neutralizes the diphtheritic poison, sets free the nerves of animal life, subdues the fever and inflammation, destroys the pabulum that sustains the membrane, cuts short the disease, conquers its sequelæ,

and shields other members of the family from an attack. Upon the subsidence of the fever, as is usually the case in from twenty-four to thirty-six hours, a purulent secretion begins to loosen the membrane, and soon, thereafter, to detach it in flaky, ragged fragments. This process may take place, and recovery be possible, even when the larynx and trachea are implicated. The membrane is seldom renewed, when this secretion is maintained by a steady use of the remedy. Alcohol is as antagonistic to diphtheria as belladonna to opium, or quinia to malaria. Like any other antidote, it must be given promptly at the outset, as otherwise its potency will be lessened, perhaps lost altogether.

Alcohol does not act as a stimulant, nor induce any of its ordinary effects. Enough may be given to cause profound intoxication in health, and yet there exist no signs of excitement nor odor in the breath. Hence at a late stage of the disease it is of little avail.

Should the administration of alcohol anticipate grave symptoms by thirty-six hours, recovery is assured; should the epiglottis be implicated, a croupy cough present, or the blood much contaminated, recovery is possible; but should the larynx be involved so as to impede the aëration of the blood, recovery is improbable, though, even then, the secretion of pus may detach, disintegrate and supplant the membrane.

All cases of croup, on the failure of the usual remedies to subdue the harsh, rasping cough, should have alcohol added to the treatment; all cases of scarlatina, on the appearance of a membranous patch in the fauces, should be considered as diphtheria; all diseases associated with diphtheria, inasmuch as its presence casts a baleful shadow over every other morbid condition, should be disregarded, or, at least, receive secondary attention only; all the sequelæ of diphtheria—paralysis, albuminuria, hemorrhage, anæmia, etc., etc.—should, whatever else might be demanded, be subjected to this all-potent remedy.

Quinia is an efficient ally to alcohol. It energizes the ganglionic nervous system—a member of the vital forces not less important than the vascular—and thus enables the organism to right itself and resume its functions.

Iron plays an unimportant part at first; but later, when the diphtheritic poison has been neutralized, it restores color to the blood, imparts force to the nerves, and awakens active nutrition—matters of no light moment in most cases. At an early day, even food and other means to support nature are of slender advantage; but when alcohol and quinine have tempered the violence of the symptoms, they are imperatively demanded.

The power of alcohol and quinine to prevent blood-degeneration and

nerve-exhaustion, depends on fresh air, bodily rest, mental quietude, and disuse of lowering medicines. So, also, the power of iron and food to restore the fluids and solids to their normal standard, is only operative by observing the same general caution as to impure air, active exertion, and heroic treatment of individual conditions.

Alcohol and quinine have no greater power to cure than to prevent diphtheria, provided they are given promptly and continuously. With thorough ventilation they are all that is needed to purify a room or a house, unless there exist some extraneous source of infection, demanding special attention.

II.—THE HISTORIES OF TYPICAL CASES.

Alcohol inefficient as a stimulant—efficient as a preventive.

C. B., nearly six years of age, had been ailing a week with what the parents supposed to be the mumps, when I was called. The child met me in the hall, and presented no indications of serious illness. On inspection, the entire pharynx was found covered with a thin layer of membrane. The fetor was slight, the inflammation trivial, and the dysphagia scarcely noticeable. Externally, the appearance simulated parotitis, only the swelling was lower and broader, and had greater hardness and less sensibility. The child was put in bed, and a teaspoonful of whisky with a third of a grain of quinine given every hour. As the symptoms became more grave, the dose was gradually increased to double this quantity. The treatment did not seem to have the slightest effect. The child died on the seventh day from blood-poisoning. The parents and five other children, one of whom had Pott's disease of the spine, took whisky and quinine four times a day, in doses varying from one to six drachms. All escaped except the eldest daughter, who had on one tonsil a small membranous patch that fell off in two days' time.

Abortive action of alcohol—Diphtheria without exudation—Danger of sewer gas.

A little girl, three years of age, recovered from a severe attack of diphtheria in twelve days, by the use, almost exclusively, of whisky. Having been much petted, it was impossible to induce her to take the quinine very frequently. The parents, another child and two servants escaped by the virtues of the antidote. The aunt, a person of strong temperance proclivities, who was in constant attendance on the child, refused to follow my prescription. When the child was convalescent, she began to experience throat-symptoms, to loathe food, and to suffer from weakness. Her pulse was feeble and her extremities were cold. Her system seemed laboring under some powerfully depressing agent, and yet the local signs of diphtheria were absent. The fauces had a diffuse, deep-colored redness, and the tonsils secreted a tenacious, muco-purulent matter, that was readily washed away by a gargle.

A few days after the termination of my attendance on the child, I was sent for to see the aunt. The local symptoms had subsided, but the general had become more pronounced. There were present the most dangerous sequelæ of blood-poisoning: feebleness of the heart's impulse, and sluggishness of the ganglionic nerves. She was directed to take whisky and quinine, to use nourishing food, and to keep her room. As soon as the appetite returned, the nutrition improved, the blood gained volume, and the nerves sent force to the organs, iron was prescribed and exercise in the open air enforced. It was three months or more before this patient regained her usual health.

The sickness in this family began in March of last year, and was traced to sewer-gas as the exciting cause. This being prevented from entering the house by running a ventilator from the main trap in the water-closet to the kitchen flue of the adjoining house, the recurrence of diphtheria has been prevented, though other precaution, save the use of alcohol and quinine, was not taken. The health of the family has since been excellent.

Clinical observations, similar to those just detailed, made in another family.

This family consisted of the grandmother, the mother, two children—a girl of eleven and a boy of six years of age—and two servants. The mother and the two children slept in the room adjacent to the bath-room, where the odor was so offensive as to lead to the constant employment of disinfectants.

The girl was attacked with diphtheria the 24th of January, and the boy the 11th of February, of last year.

The girl had a very severe attack, primarily from the poisoning of the blood, and secondarily from the swelling and elongation of the uvula. The membrane was slow in falling, and then, as she began to sit up, a paralytic affection of the pharyngeal muscles showed itself. Nevertheless, in ten weeks she regained her usual health.

The boy's symptoms were light compared with those of his sister, and soon subsided. From some cause, perhaps neglect to continue his medicine a sufficient length of time, or fault in not attending to the ventilation of the soil-pipe immediately, the boy was attacked again the 23d of February. This attack was much less severe than the first His recovery was subsequently prompt and complete.

As the boy improved, the grandmother began to show signs of the secondary effects of diphtheria, although at no time had there been the slightest deposit in the fauces. The mucous membrane had been merely dry, glazed and injected. The prostration had come on so gradually, that I was surprised, when my attention was called to her, to find the extremities cold, and the pulse small and feeble. Forgetting herself in her anxiety for the children, she had neglected to take the preventive medicine, except at rare intervals. Her daughter, however, observed proper precaution, and escaped.

The treatment of this case consisted, at first, of rest in bed, and the use of whisky and quinine as medicine, and of lime-water and milk as food, and then, as her strength returned, of gentle exercise in the open air and the addition of iron, meat and vegetables to the programme. My attendance on the grandmother extended from the 27th of March to the 1st of May, when the family left for the country. In each case the recovery was perfect. Meanwhile, the joints of the soil-pipe had been examined, and a ventilator four inches in diameter carried from the two water-closets to the roof of the house. Since this was done, no odor has been perceptible, nor any form of filth-disease present.

Secondary results of diphtheria without exudation.

A gentleman, seventy years of age, was seized with creeping chills and flying rheumatic pains. He thought he had taken cold, and treated himself, as had been his wont for similar attacks, on the starving plan. Having on a previous occasion examined his urine, and found it heavily laden with phosphates, I was also led to the same conclusion, and induced to prescribe Rochelle salt, and to direct an unstimulating diet. To my surprise, he rapidly grew worse. He was indifferent to food, had cold hands and a purple color under the nails, and manifested no inclination to leave the lounge, except to change, as his posture became irksome, for a few minutes to an arm-chair. This prostration, coupled with his years, gave me serious apprehensions as to the final issue. There was no disease of the heart or of the fauces to be detected. As to the kidneys, they were excluded by a recent examination of the urine.

In a day or two, a gouty joint of his right foot began to be painful; and directly all the toes of the left foot, which had never before been affected, became red and swollen. Whilst this gouty inflammation was showing itself in the feet, an ulcer with deep red, elevated margins appeared on the right tonsil. The rest of the gland was intact.

At the first indications of increasing debility, whisky and quinine were given cautiously as a stimulant and tonic; and then, when it was found that the feet gradually improved under this treatment, the amount and frequency of the dose was systematically carried up to the diphtheria-level. Meanwhile nourishment was not neglected.

What was singular—a fact that gave me the clue to the real nature of the disease—the trouble in the feet left almost as quickly as it appeared, although little or no impression had been made on the symptoms of nerve-exhaustion. Besides, the ulcer soon lost its red, prominent boundaries, and appeared not unlike those so often seen on the mucous membranes. At this stage, the muriated tincture of iron was added to the whisky and quinine.

Notwithstanding the serious aspect of this case, convalescence was so far established at the end of three weeks, that the patient was permitted to leave the city for his farm in Fairfield, Conn. Here his medicine being materially aided by country air and exercise in the garden, he improved steadily, and in two months regained his usual vigor. At present his health is better than it was before his illness.

If this was not a case of diphtheria—one of great gravity—I am at a loss what name to apply to his disease. One other strongly confirmatory symptom I should have mentioned: at an early period of the attack, the patient had a fit of strangulation on taking the first swallow of a glass of milk. Subsequently he was obliged to be cautious and methodical whenever he drank fluids.

Diphtheria with pneumonia.

A gentleman who had for many years been superintendent of a large brass manufactory, where his nerves had at length become so shattered by the roar of machinery and the reverberation of metal that he was about retiring to a farm in Connecticut, was taken down with pneumonia and diphtheria simultaneously. Brandy and quinine carried him quickly and safely through these diseases; whereupon the country air, imparting tone to the nervous system, restored the full vigor of former years.

The membrane extending to larynx, trachea and bronchi.

A child seventeen months old, badly nourished, and subjected to the adverse conditions of the back basement of a tenement house, came under my care the third day of its illness. The exudation covered the fauces and filled the nostrils. The voice was extinct, the head thrown back, and the inspiration laborious and whistling. I held out no hopes to the parents of recovery, but told them that their only chance was to give, as long as the child could swallow, the following prescription.

Quiniæ sulp., 6 grains; Acid. sulp. aromat., 20 gtt.; Sp. frumenti, 1 ounce; Aq. fontanæ, 2 ounces. Mix. Dose, a teaspoonful every hour and a half in water.

This was given singly and uninterruptedly until convalescence was established, when the whisky alone was relied upon.

On the third day of my attendance, as the membranous secretion gave place to a purulent one and the respiration improved, the ears became filled with the same deposit, and the cervical glands enlarged by a low form of inflammation. Two of these glands quickly suppurated and were lanced. In the mean time the exudation having disappeared, the medicine was given at longer intervals, and lime-water and condensed milk substituted for the mother's milk, which was watery and insufficient.

In a day or two the child began to struggle for breath, as in membranous croup, when the quinine and whisky were re-ordered as at first. The effect was a copious purulent secretion, a disintegration of the membrane, and the relaxation of the spasm. As soon, however, as this danger was past, a graver one, if possible, presented itself—the extension of the exudation to the bronchial tubes. The child did not expand its chest, had a livid, bronzed look, was bathed in a clammy, profuse perspiration, and felt as cold as a piece of marble.

I directed an emetic of ipecacuanha, sinapisms to the chest, dry warmth to the extremities, and a continuance of the prescription. The emesis, bringing up a large amount of muco-purulent matter, gave instant relief. Afterwards the child vomited once or twice a day spontaneously. My attendance extended from February 19th to March 11th, but ten days before the last date the recovery was assured. This was not retarded or marred by any secondary trouble whatever.

Diphtheria and scarlatina in the same subject.

A boy, six years of age, was taken with diphtheritic sore throat; and though the local disease remained much the same, he rapidly grew worse. His blood seemed saturated with the poison—as shown by the stomach rejecting all food and drink, by the heart acting feebly and irregularly, by the extremities being cold and shriveled, and the skin having a dusky, sodden look. At first, one and then two teaspoonfuls of brandy were given every two hours, but soon the larger dose every hour. Food in any form would not remain on the stomach, and quinine, promptly rejected, induced a retching that was slow to subside. The brandy, only tolerated in divided doses, had to be often repeated to make good the loss. On the third day there was a typhus-like fever, lividity of the surface, oppression of the brain, muttering delirium, and a quick, feeble pulse. On the fourth day scarlatina made its appearance. The eruption, save mottled blotches on the face, was confined to the trunk, and had a deep raspberry hue. As the symptoms assumed greater gravity, the brandy was given in three-drachm doses every hour, and aided, as far as the stomach would permit, by quinine, and lime-water and milk. At the advent of the eruption, the membrane began to spread over the fauces and to extend up the posterior nares, and, at its decline, to be detached in putrid flakes and discharged in purulent sputa. The active treatment extended over two weeks, and resulted, without accident, in a speedy and perfect recovery.

Diphtheria and scarlatina in the same house.

A girl, nine and a half years old, deficient in constitutional force, weakened by too rapid growth, and afflicted with lateral curvature of the spine, was taken with diphtheria. The exudation on the third day covered the fauces, filled the nostrils, and extended along the roof of the mouth. The symptoms became more and more typhoid, and the putrescence more and more pronounced. Food and drink were not tolerated, quinia induced violent retching, and brandy was vomited unless given in small quantities. The case seemed desperate, as it presented all the signs of malignancy. Beginning at first with smaller doses, the brandy was soon increased to four drachms the hour, and when rejected was made good. As the stomach became more tractable, lime-water and milk, scalded in a thin decoction of farina, was given for nourishment; as the disease began to yield, quinia was administered in suppositories; and, as the membrane lost its hold and was supplanted by a purulent secretion, the tincture of iron, in small and frequent doses, was conjoined with the brandy. In two weeks convalescence was fully inaugurated; and in three, when the local disease was

completely subdued, a semi-paralytic state of the heart showed itself, and necessitated the removal of pillows and a rigid enforcement of the horizontal posture. Eventually she was restored to her usual health without a drawback, excepting a discharge from the right ear.

On the fifth day of this patient's illness, two of her younger sisters were attacked with scarlatina. The whisky which they, together with the other members of the family, had been taking as a prophylactic, was now continued as a medicine. The only addition was a diaphoretic mixture. They passed through the fever in the most satisfactory manner, it being neither aggravated by complications nor prolonged by secondary disorders. The others in the house, some twelve in number, exclusive of the servants, escaped by the virtues of the antidote, though the scraping of walls, the burning of clothes, the tearing up of carpets, etc., were omitted.

Abortive power of alcohol.

I was called on a Sunday evening by my friend, Dr. Burge, to see a lady whose child had died the morning previous, of diphtheria. She had held the child most of the time of its illness, and kissed it repeatedly and frantically on the lips, as putrescent matter flowed from them in its last moments. Friday and Saturday she had had an exudation of moderate extent in the fauces, but now she had, in addition, a diffused intumescence and induration of the neck. Seeing that the patient had inhaled the child's breath for six days, had had patches on both tonsils for two, and had applied her mouth to the poison many times, I mentioned to the doctor that we had all the conditions present foreshadowing a malignant case, and that, regarding alcohol as a true antidote, I would advise its administration in full doses, the same as when the disease was at its height. Besides the quinine previously prescribed, the patient took a tablespoonful of whisky every hour with this result: she attended the child's funeral on Tuesday, and in a day or two regained her usual health. In this case, the abortive power of alcohol was fully manifested—a power it rarely fails to assert.

III. THE REPORTS OF CASES AND THE CERTIFICATES OF DEATH.

To further substantiate the virtues of alcohol in the treatment of diphtheria, I will appeal to the records of the Health Board of this city. From the figures furnished me by two persons connected with this department, it appears:

In 1874 there were reported 1,651 cases of diphtheria; in 1875, 2,669 cases, and in 1876, 2,329 cases; making in all 6,649 cases.

During the same years, respectively, there were reported 580,965, and 810 deaths from diphtheria, and 318, 451 and 412 deaths from croup, making the total mortality from diphtheria 2,355, from croup 1,181, and from diphtheria and croup 3,536.

Now if it be assumed that all the cases reported as diphtheria were genuine, and that the majority of deaths from croup had a diphtheritic origin, as doubtless is true, then there will be slight grounds for congratulation over the progress made by therapeutics. The mortality is

truly appalling. Even including the croupous, among the diphtheritic cases, the exhibit is far from flattering.

From Jan. 10th, 1874, when I lost the young girl whose history is the first presented in this paper, to this date, I have reported 78 cases of diphtheria, and lost one only. This even does not rightfully belong to the list, as the child had been under the care of a homœopathic physician several days. A younger child lay dead in the house when I was called. Besides, the patient refused all food and medicine, and died in thirty-six hours. An older child promptly recovered.

To these 78 cases should be added some eight cases, or more, which, from the slight local trouble or other cause, were not reported—but which, from the course of the disease, I am convinced were really diphtheritic. Three of these cases—two of which are related above—from the delay in resorting to brandy and quinine at the outset, required much longer treatment than usual. Thus it appears that, in a period of three and a half years, 85 cases of diphtheria have been treated, successively, without a failure. What is more, not a death appears under the head of croup, or other disease, the sequel of the diphtheritic poison.

The following report was also furnished me as to the number of deaths and their causes for the same period: Old age, 2; heart disease, 2; softening of brain, 1; cancer, 1; apoplexy, 1; phthisis, 2; pneumonia, 1; congestion of lungs, 1; jaundice, 1; typhoid fever, 1; cerebro-spinal meningitis, 1; cystitis, 1; Bright's disease, 1; puerperal fever, 1; diphtheria, 1; scarlatina, 1; cholera infantum, 5; marasmus, 2; convulsions, 2; chronic eczema, 1; whooping-cough, 1; and dentition, 2.

In this connection, it may be well to examine the claims of tracheotomy as a forlorn hope. The point is, will it increase or lessen the chances of recovery? Dr. Pilcher's tables of operations in this city lead to the conclusion that twenty per cent. has been saved after the failure of medicine. If this be so, then surely no case should be given up until the aid of surgery has been invoked. Such aid having rarely, or never appeared proper in my practice, I thought the grouping of diphtheria, croup, œdema glottidis and laryngitis under one head might involve a fallacy. The results of my investigations are presented in the tables following:

	Operations for Diphtheria and Croup.	For Diphtheria.	Recovery.	Death.	For Croup.	Recovery.	Death.
Atkinson, G. H	2	2	1	1	.....	.....	.....
Ball, J	2	1	.....	1	1	1	.....
Barber, I. H	3	.....	.....	.....	3	.....	3
Bunker, E. S	3	2	.....	2	1	.....	1
Cochran, G	5	.....	.....	.....	5	2	3
" J	7	.....	.....	.....	7	.....	7
Crosby, A. B	1	1	.....	1	.....	.....	.....
Dodge, D. A	2	2	.....	2	.....	.....	.....
Evans, G. A	2	1	.....	1	1	.....	1
Figueira, M	2	2	.....	2	.....	.....	.....
Fowler, G. R	11	7	1	6	4	1	3
Garrigues, H. J	1	1	.....	1	.....	.....	.....
Gerster, A. G	1	1	.....	1	.....	.....	.....
Giberson, C. H	3	3	.....	3	.....	.....	.....
Gilfillan, W	15	10	1	9	5	.....	5
Hesse, R	3	1	.....	1	2	.....	2
Hutchison, J. C	25	15	.....	15	10	2	8
" N. G	1	1	.....	1	.....	.....	.....
Jewett, C	2	1	.....	1	1	.....	1
Kissam, D. E	2	2	.....	2	.....	.....	.....
Krauter, J	12	8	2	6	4	2	2
Loewenstein, H	1	1	1	.....	.....	.....	.....
_____	2	2	.....	2	.....	.....	.....
_____	6	.....	.....	.....	6	.....	6
Minor, J. M	5	3	1	2	2	1	1
Otterson, W. C	1	.....	.....	.....	1	.....	1
Pilcher, L. S	8	6	3	3	2	.....	2
Pine, O. S	1	.....	.....	.....	1	.....	1
Rappold, J. C	10	6	.....	6	4	2	2
Read, H. N	4	3	.....	3	1	1	.....
Riedel, H	1	1	.....	1	.....	.....	.....
Rockwell, F. W	8	4	1	3	4	1	3
Sanford, W. F	1	1	.....	1	.....	.....	.....
Sherwell, S	4	1	.....	1	3	1	2
Stuart, F. H	1	.....	.....	.....	1	.....	1
Wackerhagen, G	1	1	.....	1	.....	.....	.....
Wallace, W	1	.....	.....	.....	1	1	.....
Watt, J	1	1	.....	1	.....	.....	.....
White, W. T	1	1	1	.....	.....	.....	.....
Wight, J. S	1	.....	.....	.....	1	.....	1
Wyckoff, R. M	1	.....	.....	.....	1	.....	1
	165	92	12	80	73	15	57

I have here collected together 164 operations for diphtheria and croup, 43 more than were reported by Dr. Pilcher, although, by excluding those performed in other places for either disease, and those performed in this city for catarrhal inflammation—œdema glottidis, laryngitis, etc.—I have dropped many found in his tables. My list would have been larger, had I been able to get information in regard to the cases of Drs. Enos, Isaacs, and two or three others. In my labors I am indebted to Dr. Pilcher for access to the original reports obtained by himself.

Of these 164 operations, 92 were for diphtheria, of which 12 recovered and 80 died—13 per cent.; 72 were for croup, of which 15 recovered and 57 died—20 per cent. Before the appearance of diphtheria in this city, Dr. John Cochran, a bold and skillful surgeon, had seven operations for croup, all of which died; and, during the same period, seven operations for strangulated hernia, all of which recovered. Dr. I. H. Barber relates a similar experience. Dr. R. Hesse had three fatal cases in succession. Since then he has met with two cases of croup, in which the call to operate was, apparently, imperative. The parents hesitated and begged for time. This was allowed, and small doses of calomel were given. Eventually, when the doctor went prepared to operate, the breathing had become so much easier that he declined to interfere. Both children recovered.

In the years '74,'75 and 76, there were 6 649 cases of diphtheria reported to the Health Department, and, in the same interval, 2,355 certificates were presented—a ratio of mortality greater than one to three. If, as is persistently stated, many physicians report every simple affection of the pharynx, follicular tonsillitis particularly, as diphtheria, how humiliating stands the record! The plague of olden times was not more destructive. No wonder, with an ill success such as this, the physician, in his extremity, flies to the surgeon for succor. Should this be? Need medicine be so helpless as to be content with thirteen per cent. of recoveries? I make bold to say that, had these 92 cases been treated early, freely, steadily and persistently with alcohol, the majority would have been saved, and that, had this remedy failed, there would have been no chance for tracheotomy.

IV.—THE PREVENTIVE MEASURES.

During the prevalence of diphtheria in a family, those exposed directly or indirectly to infection should be protected by having a free circulation of air through the house, and by taking a certain amount of alcohol each day, until the patient has recovered. My usual prescription is here given: Quinoidine, Cinchoniæ sulp., of each, 25 grains; Acid. sulp. aromat, 2 drachms; Sp. frumenti, 8 ounces. Dose, fifteen drops to a tablespoonful, four or five times a day, according to the age of the subject. To all young children and to many adults, I am in the habit of directing brandy or whisky alone, in the above proportions. For the patient, quinia is substituted for the quinoidine, and the interval between the doses shortened to one or two hours. Six drachms an hour is the maximum quantity for an adult.

Most cases of diphtheria have, in addition to the common epidemic influence, a direct exciting cause. This will be found, when contagion

is excluded, to be poisonous emanations of some kind in the house, or on the premises. The *fons et origo mali* with my patients I have traced, in most instances, to sewer-gas. To hit upon some plan that would effectually shut out this deadly agent from the dwellings of my patients, I read many scientific articles on the subject, and conversed with many practical plumbers on the methods they adopted; but to no purpose, until it so happened, two years since, that a family of mine, the subjects of ever-recurring sore throats, gastric disorders, diphtheritic attacks, was happily rid of the poison. The plumber caried an iron ventilator, four inches in diameter, from each soil-pipe where it makes the outer bend of the closet-trap to the roof of the house. This ventilator replaced a lead one of small calibre, that had proven itself quite useless. Since this work was done, all forms of filth-disease have disappeared. The smaller pipe only gave egress to the gas under strong pressure; whereas the larger one acted on the principle of a flue, a draught being excited by the warmth of the gas. The larger pipe, also, permits a return-current.

In building a new house, the extension of the soil-pipe to the roof would serve the purpose fully; only in this case, were there more than one water-closet, it would be necessary to carry a ventilating pipe from the outer bends of the lower traps to a point above the upper trap, and there join it to the common soil-pipe. This is to give air to the traps; for, should a flow of water take place at the top floor, it would, if of sufficient volume to fill the soil-pipe, siphon out all the traps below. In other words, the water, entangling and carrying down bubbles of air as it passes the outer branch of the traps, creates a vacuum and sucks the traps dry. For the same reason, the leaders from the roof are poor ventilators, as every heavy rain will, almost certainly, empty all the traps in the house. When the soil-pipe, furnished with the air-pipes mentioned above, terminates in the kitchen flue, a perfect, or nearly a perfect, immunity from the presence of sewer-gas is attained, however much it may be forced upward by the accumulation of water and filth in the sewers. When, on the contrary, the ventilator, though constructed on the same plan, terminates on the roof, I fear that the gas, not finding a quick exit above, may at times, during very stormy weather, make its way, more or less, through the water in the traps. The flue-ventilator has been adopted in one house, and the roof-ventilator in eight others of my patients. All of these houses have since—a period varying from two years to ten months—been free from diphtheria, as well as other diseases due to blood-poisoning. Previous to this improvement in ventilation I had treated in these houses twenty-eight cases of diphtheria, together with a host of ailments arising from the one common cause. In two houses, besides these eight, the same plan was followed, only, to make

security doubly secure, a trap was placed in the soil-pipe at its exit from the house, and thence a ventilator run to the kitchen flue. In one I had, subsequently, a putrid case of diphtheria, and in the other a fatal case of scarlatina. In each, after a month or two, the odor of sewer-gas was more perceptible than before. This plan, as possibly all others designed to shut out the sewer-gas, is certain, almost, to block up the soil-pipe, stop the draught in the ventilator, and cause an accumulation of filth and gases on the premises. To me it seems that no plan will work well in practice, unless the soil-pipe is kept open, and a free rapid exit of the gas secured at the top of the house.

PATHOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY.

Regular Meeting, March 22d, 1877.

The President, Dr. Rockwell, in the chair.

ATRESIA ŒSOPHAGI.

Dr. Pilcher presented specimen with photographs, and the following history:

A male child, born Jan. 20th, '77, was well-developed and nourished, weighing 8 lbs.

From the first, swallowing was difficult, as the milk was regurgitated after a small quantity was taken, with apparent suffering. This state persisted during life, and on the fourth day pneumonia appeared, which, together with inanition, caused death of child on the sixth day after birth.

At the necropsy, mouth and pharynx were found normal; œsophagus normal for upper third of its course, but at beginning of the middle third it abruptly contracted into an impervious muscular cord, continued downward in the proper track of the organ for ⅜ inch, when it became continuous with lower part of the œsophagus, which apparently sprung from post-wall of the trachea, ½ inch above its bifurcation, thence extending normally, large and patent, to the stomach.

A probe introduced into cardiac end of the œsophagus, passes into trachea at the point above stated, opening through posterior membranous wall of trachea, whose calibre was not diminished.

Both lungs were pneumonic, and contained large apoplexies.

After the examination of this very interesting specimen, the Secretary called attention to a few other reported cases, as follows:

1.—Baker Brown's case, at Path. Soc. of London ("Lancet," Ap. 12th, '56), sex, age at death and development of child not stated.

Total obliteration of œsophagus at ¾ inch below pharynx.

Shortly below this, the gastric end opened into trachea by a slit.

2.—Ward's case, Path. Soc. of London, Nov. 12th, '56. Child full term, could not swallow food and was cyanotic.

Died eleventh day of inanition.

Autopsy: foramen ovale and ductus arteriosus still patent; œsophagus "impervious," but no particulars are given.

3.—Porro's case ("Annale di Medicina Milano," Sept., 1871). Girl born Aug., 1870. Died third day. Larynx and pharynx normal; œsophagus ended in *cul-de-sac* at 25 mm. below glottis; tube ENTIRELY ABSENT from that point to tracheal bifurcation—*i. e.*, about 30 mm. The gastric end opens into trachea at apex of angle of bifurcation.

Holmes' "Surgical Diseases of Children" mentions three cases, q. v Mott's cases, Path. Soc., London, Nov. 16th, 1875.

a. Eight-month child, died fourth day.

b. Term, survived a week.

In both the pharyngeal end terminated in a *cul-de-sac* opposite cricoid cartilage, and gastric end opened into trachea at or near bifurcation.

One child had the R. subclavian given off *last* from the arch of aorta, and passing behind trachea. The two carotids arose from a common trunk.

N. B. SIZER, *Secretary.*

——THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The November meeting will be held on the 20th, at which there will be presented the following papers:

Open-air treatment of Phthisis Pulmonalis, with especial reference to the *climate* of the Sandwich Islands, by Dr. H. B. White.

The uses of Nitrous Oxide in Minor Surgery, by Dr. G. W. Brush.

Medical Education in the United States, by Dr. D. E. Chace.

It is expected that the President of the Medical Society of the State of New York, DR. J. FOSTER JENKINS, of Yonkers, will be present at this meeting.

Ἀσκληπιὸς ὁ Σωτὴρ

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυναων.

Hymns of Homer, No. XVI.

ITEMS.

——The American Pharmaceutical Association held its Twenty-fifth Convention at Toronto, Sept. 4th to 7th. Brooklyn was represented by Messrs. Cutts, Heydenreich, Sayre, Menninger and Dr. Squibb. The action taken by this convention concerning pharmacopœial revision was diametrically opposite to that taken by the American Medical Association at Chicago. Not only did it ordain the appointment of a strong committee who are to prepare the text of a modernized pharmacopœia, but it tendered to Dr. Squibb a vote of thanks "for his earnest efforts during the past two or three years to inaugurate an improvement in the plan of revision." This resolution, introduced by Mr. Sheppard, of Boston, was affirmed unanimously. In this connection, *The Druggists' Circular* says: "The project devised by Dr. Squibb was treated by the A. M. A. with undeserved harshness, both towards the project and its projector—in fact, in a manner that was but little short of contemptible." . . . . The committee above referred to is composed of Charles Rice, Chairman; F. Hoffman, Bedford Maisch, Remington, Bullock, Markoe, Sheppard, Hancock, Ebert, Diehl, Wayne, Crawford, Mohr, Painter, Saunders.

——St. John's Hospital.—This charity is progressing, its walls being raised as rapidly as its finances allow—no debts being incurred. The present accommodations are 150 beds in wards, besides a few private rooms on the first floor; size of wards 100x25 feet, with a corridor of twelve feet. The general plan coincides with that of the St. Luke's Hospital, in New York, plus certain modern appliances. The elevator is twelve by eight, running the entire depth of building, and has fire-proof walls. The administration is sustained by the Protestant Episcopal Church, and is open to all Protestant religionists. The advisory medical committee are Drs. Dudley, Hutchison and Hopkins.

——Physiology at the Johns Hopkins University.—There is one vacancy among the fellowships of the Johns Hopkins University yielding $500 per annum. It will be awarded, November 1, for special proficiency in one of these five departments: Greek, Mathematics, Physics. Chemistry or Physiology. Apply by letter to the President.

——Pocket-case Record and Prescription Blank-book.—Dr. G. E. Walton, of Cincinnati, is the author of a most convenient book for the desk as well as pocket. It contains 176 pages, in flexible cover, weighs a little over four ounces; cost, thirty-five cents. The stub, from which the prescription page is torn, is ruled on one side for treatment, and on the other for symptoms and diagnosis.

——Public Health, Vol. III, is now ready for distribution by *Hurd & Houghton*, 13 Astor Place, New York: price, $4.00, delivered. This volume gives the cream of the transactions of the Annual Meeting of the American Public Health Association, at Boston, in 1876. It contains papers by Drs. Flint, Steiner, Billings, Stephen Smith, Woodworth, A. N. Bell, Jerome Walker, Segur, Elisha Harris, Col. Waring, Charlton T. Lewis and others. . . . The price per volume of Vols. I and II is $6.50, but they can be had with Vol. III for $14.00; or either one of the back issues can be obtained, if taken with the last, at a similar reduction.

——The Proceedings, Vol. I, is pleasantly noticed in the London *Lancet*, August 18th, mention being made of two papers in particular—those of Drs. H. N. Read and Pilcher. The closing sentence of the notice contains what *we know* to be the fact, so we will quote it, as a doubt-dispeller for those who are not quite certain: "Altogether, the volume bears traces of *good work honestly performed.*" . . . . Dr. Sherwell, of this city, has a very suggestive article in the same number of the *Lancet* on "The Antiseptic Treatment of Amputations in Military Hospitals." It should be noted by all hospital surgeons.

——Filth Diphtheria.—In the family of the Rev. Thomas Crowther, at 43 Fifth Street, E. D., this disease caused the death of four persons, out of a family consisting of father, mother and four children. The deaths occurred Oct. 5th, 10th, 11th and 12th; the funerals were conducted in a private manner, according to the recent regulation of the Board of Health. The origination of the attack is devoid of any history of contagion. The premises are reported to have been properly connected with the sewer—that is, the plumbers say they discover no defect, apart from the absence of a ventilation of the soil-pipe—but the cellar air was found to be close and mephitic, from prolonged closure of the house during the summer season. One published statement puts the condition in this way: "The air therein (in the cellar) being so foul as

to be scarcely able to support combustion," leaving the mind in doubt if the writer attaches diphtheria-production with the property of non-oxygenation, and leaving the source of this foulness all undiscovered. . . . . One point is very certain: that this lamentable experience will furnish a lasting lesson of the necessity of greater care as to the hygiene of domicile.

——Dialysed Iron has already proved itself a most popular preparation. Not less than a dozen drug-houses, foreign and domestic, are producing a drug bearing this name. These preparations are not all that they purport to be. Prof. Maisch has shown that one or more of them are made by saturation, rather than by dialysis. The characteristics of a five per cent. solution of dialysed iron are a deep brown-red color, which in thin layers is perfectly transparent. It is free from odor and has only a faintly astringent taste. It has not even slight acid reaction to test-paper. It is best given by itself on sugar, or some plain syrup that is free from acid. This same preparation has made its appearance in Austria under the name "catalytic iron." *(Am. Jl. of Pharmacy.)* . . . . If it is true that dialysed iron is an antidote for arsenical poisoning, the prescribing of Fowler's solution in combination with it, as has been done, will be contra-indicated, unless an inert arseniate of iron is desired.

——Iodoform.—A correspondent to the *Medical Brief*, October, states that tannin deodorizes iodoform. He uses equal parts of each as an application to chancroids and old ulcers. . . . . The *Clinic*, Oct. 13th, quotes from an exchange the following use of iodoform in orchitis: "An ointment is used containing thirty grammes of lard to two to four grammes of iodoform, according to the intensity of the inflammation." It calms the pain, acts as a resolvent, and shortens the duration of the disease.

——Iodine may be deprived of its stain by adding a few drops of carbolic acid to the tincture, which will thus be rendered more efficacious and certain.—*Am. Jl. Med. Sciences.*

——Salicin, in acute rheumatism, is inadequately valued, according to the editor of the *Lancet*, who regards it as not less certain than quinine for ague.

——Enterprising.—Dr. Garrigue's paper, published in the October number of the Proceedings, has been liberally quoted by Medical Journals all over the country, and due credit given to the Proceedings. *The Medical Record*, in its issue of Oct. 27th, extracts a column from Dr. G.'s paper, *without* intimating its obligation to the Proceedings.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, NOVEMBER 20, 1877.

OPEN AIR, OR OUT-DOOR LIFE, IN THE PREVENTION AND TREATMENT OF PHTHISIS PULMONALIS, WITH ESPECIAL REFERENCE TO THE CLIMATE OF THE SANDWICH ISLANDS.

BY H. P. WHITE, M.D.

Pure air is the great desideratum, either as the chief therapeutic agent, or as of equal importance to any other in the treatment of any disease.

This truth is recognized now by all members of the profession, more or less, though the popular mind does not yet seem to realize that it is of the greatest vital importance. There has been great advance in therapeutics within comparatively a few years, but in no direction has there been more improvement than in the recognized importance of *fresh air* for the preservation of, and restoration to, health in the animal economy. The time was, and that, too, within the memory of very many members of this Society, when fresh air was considered very well for healthy people, for they could stand it, but physicians were cautious about exposing their patients to its deleterious effects, especially those suffering with fevers and kindred zymotic diseases. How often I have seen in such cases the windows securely caulked, and the door of the sick chamber carefully guarded, to prevent the slightest breath of pure air from reaching the patients. It was considered too strong for them. The bare

thought that such a state of things was ever possible may well create astonishment in the minds of some here who have been educated under a better hygienic system, but we are still liable to meet just such murderous practice, and called upon almost daily to combat the prejudices of not only the ignorant, but educated people, to the admission of this best of all therapeutic agents into the sick room.

But a few years ago a case came under my notice, illustrating this ignorance and prejudice: A lady, in excellent health, confined with her first child, labor natural and easy, everything seemed to promise a speedy restoration to her normal condition of health and strength.

By orders of her physician, the windows of her room were secured against the intrusion of fresh air, and the door so carefully guarded as to admit the least possible amount of air with the necessary entrance and exit of her nurse. As a consequence of such treatment, digestion became impaired, appetite failed, mammary abscesses on both sides followed one after another, with no disposition to heal, and instead of gaining strength, or even retaining what she had, she continued to lose ground, and was for months unable to leave her room. It did not require an acute observer to lay the blame of all that misery upon the exclusion of fresh air. Not many physicians are thus groping in an unhealthy atmosphere. Thanks to scientific progress, sunlight and pure air are recognized as remedial agents in the maintenance of good health, and in the cure of disease. We can now open doors and windows, and "throw physic to the dogs," without risking a charge of malpractice.

One of the standing jokes upon our profession, viz.: the oft-told story of the doctor congratulating his patient upon his improvement by remarking that he must have followed his prescription, and getting for answer, "If I had, I would have broken my neck, for I threw it out of the window," may be turned to good account by the supposition that he forgot to close the window as the medicine went out.

My object in this article is to emphasize the proposition that the more we learn to rely upon the stimulating, invigorating effects of pure fresh air, the less we will care for drugs.

But in many cases it is not sufficient to simply open the doors and windows of the invalid's room to give him the benefit of absolutely pure air. It cannot be had in our houses, even in the best constructed and most favorably situated for free ventilation Neither can it be found out of doors, in the streets of our crowded cities. We all see the immediate beneficial effects of a change from Brooklyn to Coney Island for our little patients suffering with cholera infantum. To what is it due? Not to a change of climate, for that is the same; not to the sea air, for Brooklyn has that; but to the change from the impure air of the city to the pure air that comes sweeping in from the ocean.

How we watch our patients' stomachs, carefully direct the quantity and quality of their food, note the slightest symptoms of indigestion, yet the condition of the air they breathe is of vastly more importance. The purity of the blood depends more upon it than upon the food we eat. The source of a majority of the diseases that afflict the human family and destroy life, is found in the deadly miasms that float unseen in the atmosphere all around us, and which we unconsciously inhale in our very efforts to live. In the midst of life we are indeed surrounded by death. Every man consumes daily four pounds of oxygen, and exhales from the lungs a much greater weight of carbonic acid. Besides this, animals constantly exhale from their bodies effluvia highly poisonous and deadly. Also from the soil-pipes of our houses, and the gutters and sewers of our streets, emanates the morbific principle, zymosis, which rapidly spreads through the air, and proves so fertile a source of disease. In view of all these considerations, how important that we seek every possible means of obtaining pure air in the prevention and treatment of disease.

Our late war furnished abundant opportunities for verifying the wisdom of this practice. Our hospital barracks were well constructed to secure good ventilation—much better in this respect than our modern houses. The open ridge the whole length of the building, the open window by the bedside of every patient, to say nothing of the many openings left by hasty, careless construction, would certainly seem to furnish all that was desirable in that direction. But experience soon proved that there was purer air out of doors, and if fever took an unfavorable turn, or the wound assumed an unhealthy aspect, the patient was ordered into the open air, with only the roof of a tent for his covering, when his condition would almost invariably improve at once. But my purpose now is to speak more particularly of the necessity of *open air* in the treatment of consumptives. I am aware that in this there is nothing new; and that I run some risk of meeting your disapprobation for taking the time of the Society in discussing a method of treatment so generally recognized as correct. Yet I think it is not sufficiently insisted upon, especially for the prevention of this disease, and in the treatment of the early stages, when it promises the most benefit. I hold that if a patient cannot leave home to enjoy the beneficial treatment of out-door life in a climate suited to his case, he must seek it in our climate, with all its changes. Dress suitable to the weather, and be out all of the time, no matter what the meteorological conditions, should be the advice given to consumptive patients who are able to be out at all.

The universal testimony of scores of persons who crossed the Plains,

mostly on horseback, during the years 1850 to 1856, attributed their recovery from incipient phthisis to those months of enforced living in the open air. These emigrants rarely had sufficient covering at night for the whole party, and most were obliged to sleep in the open air. Often drenched with rain, and suffering many privations, yet the delicate and sickly did not break down, as they feared, but at once commenced to recuperate, arriving in California strong and healthy.

Our climate, owing to the sudden changes of temperature, and cold east winds, is undoubtedly most unfavorable for the full benefit of this special treatment, therefore a change of residence is desirable, and often the only thing that will be of any avail.

Must I leave home? When? Where shall I go? How long shall I stay?—are questions of momentous importance, which are referred to the family physician for his decision. Florida affords the best climate, and offers the best inducements of any place this side the Rocky Mountains; but one serious objection to the climate of Florida is that it is not suitable for a permanent residence. Patients should seek a climate suited to out-door life the year round, and remain at least three or four years, or until the tubercular cachexia is overcome, or a cure of the already established disease effected. It is because patients neglect this simple precaution that such very slim results are obtained by change of residence. Even the winter climate of Florida—certainly in many parts of the State resorted to by consumptives—is too changeable for a comfortable out-door life at all times. At St. Augustine, a place of frequent resort, a daily range of thermometer of 40° is not unfrequent, and cold storms from the ocean necessitate the lighting of fires.

One writer says: "Invalids, who spend the winter months at St. Augustine, are often prevented from venturing into the open air by the chilly northeast blast, surcharged by fogs and saline vapors, which sweeps down the coast from the northern latitudes."

The same objection, however, does not apply to some of the inland towns.

At Aiken, S. C., during some portions of the year, the climate is all that could be desired, but the summer months are unhealthy, and even in winter the diurnal range of temperature is too great for invalids to remain constantly out of doors.

Dr. Felix L. Oswald, in the *Popular Science Monthly* for Nov., 1877, says: "That low temperature in open air does not injure our lungs is conclusively proved by the fact, that of all nations of the earth, next to the inhabitants of the Senegal Islands, the Norwegians, Icelanders, Yakuts of Northern Siberia, enjoy the most perfect immunity from tubercular diseases." And to show that it is not cold alone that arrests

the tendency to these diseases, he says: "In Great Britain the (death) rate (from consumption) increases with the latitude, and attains its maximum in Glasgow, where windows are opened only *one* day for every two in Birmingham, and every three and a half in London. "But further north," among the shepherds and farmers, "the percentage suddenly sinks from 23 to 11, and even 6 if we cross the 57th parallel, which marks the boundary between the manufacturing counties of Central Scotland and the pastoral regions of the North." Again he says, that among the natives of Senegambia (Africa), pulmonary affections are not only *nearly*, but absolutely unknown. Again, he quotes Langenbeck, the great anatomist, as saying, "that pulmonary diseases have very little to do with intemperance or erotic excesses, and much less with cold weather, but are nearly exclusively (if we except tuberculous tendencies inherited from both, I say *quite* exclusively) produced by the breathing of foul air."

Our object, then, should be to find for our patients the climate so mild that their lives may be passed in the open air.

In the Hawaiian Islands we have such a climate, which, in its average temperature and in equability, may be said to be perfect; where consumptives can literally live in the open air without fear of those sudden changes so objectionable in nearly all the noted "retreats" for invalids.

These islands are situated between degrees 19 and 22 north latitude, in the region of the trade winds, which blow with great regularity about ten months of the year. Although lying within the tropics, where the heat might be expected to be oppressive and debilitating, the temperature is so modified by the constant fresh breezes coming over the wide expanse of ocean, that it does not appear to be so great as the thermometer indicates.

Says the historian, Jarves: "The climate is everywhere salubrious, and possesses a remarkable evenness of temperature, so much so that the language has no word to express the general idea of weather. Physiologists give a certain point of temperature as most conducive to health and longevity. The mean heat of these islands approaches near to it, and is highly favorable to the full development and perfection of the animal economy." Again, when speaking of certain localities as favorable for consumptives, he says: "Many individuals, by change of residence, have prolonged their lives for years, and others live with scarcely an admonition of their disease, who, in less favored regions of the North, were perpetual sufferers."

The most favorable situations for such patients are Honolulu, on the Island of Oahu, Lahaina and Ulepalekua on Maui, Kailua on Hawaii, and Ewa on Kauai, as these places have the best temperature for constant out-door life, and afford comfortable residences for invalids.

The mean temperature on or near the coast of all the islands is 75°, with but little difference between summer and winter—it being 79° for the warmest months and 72° for the coldest, showing a difference in mean temperature of but 7°.

During an observation of twelve years at Honolulu, the maximum of heat was 90°, and the minimum 53°, a difference through that long period of but 37°.

At Lahaina, during an observation of ten years, the highest register of the thermometer was 86°, and the lowest 54°, a difference in one decade of only 32°.

But a range so great as that is very unusual. During my residence at Lahaina of four years, the maximum was 84°, and the minimum 61°, while the general average for the summer months was 82° at mid-day, and about 72° for the winter months.

During a daily observation of four months, in 1858, between the hours of 9 A. M. and 5 P. M., the thermometer did not vary 1°, but remained almost absolutely stationary. The usual diurnal range at Lahaina is between 1° and 4°, and at Honolulu a little more—viz., from 3° to 6°. At Honolulu the average rain-fall is 30 inches. The average number of fine days is 285; rainy days, 37; variable days, 43. At Lahaina there is less rain-fall, and more fine days, owing to the conformation of the island at that place. The town is situated on the leeward side of the mountains, which rise 6,000 feet above the sea, intercepting the trade winds, and condensing the moisture of the air upon their tops, so that but little rain falls on the plain below. In 1860 we did not have a shower for eleven months, and there were really more than 340 fair days. Whenever the trade winds are intercepted, as at Lahaina, there is a constant and most refreshing land and sea breeze.

By ascending the mountains a few miles inland almost any degree of temperature can be obtained. The top of Mauna Kea, on Hawaii, more than 14,000 feet above the sea, is often covered with snow. Waimea, Hawaii, 4,000 feet above the sea, is a favorite resort for enervated constitutions, as the average temperature is 64°—48° being the lowest. On the table lands of Kauai, at an elevation of 4,000 feet, warm garments and fires are required as well in July as in December. If the climate of Lahaina is found too warm and enervating for consumptives, an average temperature of about 70° Fahrenheit, and very equable, is found at Ulepalekua, Maui, about two miles from the coast, and at an elevation of about 2,500 feet. Although more rain falls than at Lahaina, most of the time the weather is delightful, the atmosphere dry, clear and bracing, proving to the invalid most agreeable and invigorating.

In 1857 I was called to Ulepalekua to visit a gentleman from New York, who had arrived about a year before in the advanced stage of phthisis pulmonalis. He described his condition previous to coming to the islands, as precarious in the extreme—viz., constant and harassing cough, copious, purulent expectoration, difficulty of breathing, emaciation, night sweats, and great debility. He soon commenced to improve, and when I saw him, cough and expectoration were much less, weight was good, and strength increasing.

Physical examination showed very extensive disease, percussion giving marked dullness over all the left, and apex of the right lung, and auscultation revealing broncophony, with cavernous respiration, on the left side, and bronchial breathing, with more or less rales, on the right side. There was no normal respiratory murmur, except over the middle and base of right lung. It was altogether a most hopeless case to expect much benefit by a change of climate. But the disease seemed to be arrested. He was much in the open air, on foot or horseback, and really enjoyed life again for the four years he remained. Considering his health sufficiently re-established to warrant it, he left the Islands, and died at New Orleans on his way home.

Several of the missionaries and other foreigners went to the Islands predisposed to phthisis, and some even in the more or less advanced stages of the disease, yet all recovered health, and ever after enjoyed immunity from this dreaded scourge of colder climates.

Many of the descendants of these early families, to the third generation, still reside there, but with my four years' residence, and pretty extensive acquaintance, I don't remember to have heard of *one* who had ever suffered with phthisis pulmonalis. In fact, to foreigners, and particularly their children, the climate has proved most healthy and salubrious. The diseases are but few, and of a very mild type, as compared with other localities. Epidemics occur but seldom, and are light in character, while contagious diseases are scarcely known.

In conclusion, I feel I cannot too strongly recommend to consumptives, or to those predisposed to tubercular disease, a residence on these charming islands, cradled in the Pacific, beneath a tropical sun, yet so tempered by the benign influence of the trade winds sweeping across the ocean, as to render the climate unsurpassed in mildness and equability, permitting all the benefits possible to be derived from a constant outdoor life.

NITROUS OXIDE IN MINOR SURGERY.

BY G. W. BRUSH, M.D.

The works of ancient writers reveal to us the fact that mankind in all ages has endeavored to discover some means or agent by which physical suffering could be alleviated; and the efforts to escape this—one of the bequests of Adam—remained for many centuries practically unsolved. The Chinese used preparations of hemp more than 1,500 years ago to annul pain, and the Greeks and Romans used mandragora and opium for the same purpose, and later an Italian writer of the sixteenth century speaks of a "quintessence extracted from medicines" by "somniferous menstrua," the nature of which he does not mention. "This was kept in leaden vessels, perfectly closed lest the aura should escape, for the medicine would vanish away." When it is used, the cover being removed, it is applied to the nostrils of the sleeper, who draws in the most subtle power of the vapor by smelling, and so blocks up the fortress of the senses that he is plunged into the most profound sleep and cannot be roused without the greatest effort. (See work of Jean Baptiste Porta on "Natural Magic," Naples, 1597.)

This seems to have been only the dim flickering of the light which has burst upon the world in this nineteenth century.

It remained for an American citizen—or perhaps I should say, citizens—to give to suffering humanity, in the discovery of anæsthesia, one of the greatest boons ever bestowed upon humanity for the mitigation of suffering. In the short paper which I present to you this evening, I shall not attempt to cover all phases of this subject, nor to enter into any exhaustive treatise upon any one of the various agents used for anæsthetic purposes; but being convinced from observation that there is a wide difference in the relative safety of these agents, I shall attempt to present a few facts and arguments in favor of one of the simplest of these. I refer to Nitrous Oxide Gas.

It is unnecessary for me to give in detail the chemical composition of this gas, or the method of its manufacture. These facts, I take it for granted, are well known to all of you. Neither is it necessary that I should enter into the history of the discovery of anæsthesia to any extent, for the same reason; and I should have passed this part of the subject entirely, had it not been for a hint given by a member of our Society.

I shall, therefore, tax your patience a few moments with an outline of its history. Nitrous oxide was discovered by Dr. Priestley in 1776, who made some experiments with it. Little is known of it, however, until the year 1800, when Sir Humphrey Davy made extensive experiments, both upon himself and others, the results of which were published in a volume by "Smith, Elder & Co.," of London, in 1839.

In 1844 Dr. G. Q. Colton was traveling as a lecturer on nitrous oxide, and administering it to those of his audience who desired to experience its exhilarating effects. During one of these lectures in Hartford, Conn., the thought occurred to a gentleman in the audience that this gas might be used during operations in surgery to alleviate physical suffering, and resolving to test it, he invited the lecturer to come to his house the next morning, when, having inhaled the gas, a friend removed a tooth for him; and thus did Dr. Horace Wells offer himself to test this agent, which has since been the means of alleviating more suffering than any discovery of the age.

This was supposed to be the first operation of any kind performed under the influence of an anæsthetic, and Dr. Wells was accepted as the discoverer of anæsthesia. I find, however, in looking up the subject, in a paper written last spring by Dr. J. Marion Sims, and published in the Virginia *Medical Monthly*, and republished in *Johnstons' Dental Miscellany* for April and May of this year, that Dr. Crawford W. Long, of Athens, Ga., administered ether and removed a tumor while his patient was under its influence in March, 1842; but there is no evidence that this case was published, and I think this fact has not been generally known to the profession—at least, not until the publication of this paper by Dr. Sims. I will not stop to speak of Morton and Simpson—these names are familiar to you, and all honor is due these men, who were the pioneers in this discovery. The record concerning the discovery of anæsthesia stands to-day as follows:

Dr. Long produced anæsthesia with ether March 30th, 1842.

Dr. Wells with nitrous oxide gas, Dec. 11th, 1844.

Dr. Morton with ether, Sep. 30th, 1846.

Sir James Y. Simpson followed closely upon these in England, in the introduction of chloroform; and it is a commentary upon the ingratitude of republics, that while England has conferred the honor of knighthood upon Simpson, our own government has allowed these men, who were her citizens, to go unrewarded, and to-day few outside of the medical profession know to whom they are indebted for this discovery. Thus much for the history.

Nitrous oxide appears to have been, then, the agent first used to produce anæsthesia where the result was published at the time.

Having used this agent for the last ten years in the various operations pertaining to dental surgery, and more recently for operations in general surgery, I have become convinced that its field of usefulness may be enlarged with increased comfort to our patients, as well as ourselves. I shall therefore present a few facts and deductions gathered from experience.

First, as to the relative safety of nitrous oxide as compared with other anæsthetics. Of course, in selecting an anæsthetic, the surgeon first consults the safety of his patient, and it is important to know whether he can select one which will bring his patient safely through the operation, as a fatal result is by no means desirable—on the contrary, all have an earnest desire to avoid so disastrous a result, and the unenviable notoriety which it inevitably brings. I think I shall be able to demonstrate that nitrous oxide is the agent to select, if safety is the first consideration: and here I find it necessary to add to my own experience that of others. Prof. Andrews gives the following statistics, published in the *Chicago Medical Examiner:*

Ether	One death in	23,204	administrations.
Chloroform	"	"	"	2,723	"
Ether and Chloroform (mixed)	"	"	"	5,558	"
Bi-chloride of methyline	"	"	"	7,000	"
Nitrous oxide	No deaths in	75,000	"

There are, however, three or four cases on record where deaths have occurred from the nitrous oxide, one of which occurred in New York city in 1864, and still another in the same city at a later date.

The condition of the first-mentioned case, as revealed by the post mortem, was such as should have deterred any one of experience from administering an anæsthetic of any kind, being that of an advanced stage of phthisis pulmonalis. There have been one or two cases in England of recent occurrence, in one of which the subject was a surgeon, the post mortem showing fatty degeneration of the heart. The evidence in this case, so far as yet published, is not clear enough to enable us to determine the actual cause of death. I hope to hear more of the details of this case in future.

The following case came under my own observation last spring, and is the worst case where I have had occasion to administer nitrous oxide gas. Mrs. B., a patient of a member of this Society, had tubercular deposits in the lungs, two or three hemorrhages having occurred during the previous three months. She had not been out of the house for several months; in addition to this, she was seven months advanced in pregnancy, and was suffering intensely from the formation of two or three alveolar abscesses, when I first saw her.

Her attending physician stated that he could get no medicines to act, and his patient could not hold out long in that condition. He wished to know if I would be willing to give her the gas and operate for the removal of the teeth involved, at the same time stating that he would not dare give her chloroform or ether.

I hesitated, hoping that the remedies and time would obviate the necessity for interference; but there being no relief, the next day we decided to take what was deemed the least of two evils, and I gave her the nitrous oxide, and removed the teeth, the result being wholly satisfactory.

Experience shows, then, beyond a doubt, that this is the safest known anæsthetic; and when we consider that it has been manufactured and administered extensively throughout the country and also in Europe, in many cases by those who were inexperienced, and with little knowledge of chemistry, working often with impure materials and imperfect apparatus, it is marvelous that there are so few accidents to record, and the almost absolute safety of the agent needs no stronger argument.

I might add what has been reported to me of one who has used it very extensively, who said no questions were asked as to the physical condition of the subject, and in no case had any injurious result followed. That such a statement should be made by one who was daily and hourly taking patients to the borders of the land "whence no traveler returns," be the risk ever so small, shows the utter recklessness that has prevailed in the administration of this anæsthetic. While I believe it to be the safest agent for anæsthetic purposes, the very fact that death *has* followed its administration should deter any one from administering it unless qualified to decide to whom it should be given.

The cases which contraindicate its use may usually be determined by a brief examination.

That it can be safely given in all cases where other anæsthetics would be used is a safe starting-point, and experience has proved that the line can be carried far beyond this. The cases I have been in the habit of excluding in my own practice, are where there has recently been congestion of the lungs, or pneumonia, or evidence of the existence of hypertrophy of the heart, with thinning of its walls, or a suspicion of an atheromatous condition of the blood vessels; and while I am not prepared to assert that it may not be given in these cases without harm, the fact that it stimulates the circulation has led me to exclude these and like cases; at the same time, it is more than probable that cases of this kind have passed safely through the hands of those who have used this agent, and in my own experience of its daily use for years, I have not had a case which caused me any anxiety for my patient. The question of the physiological action of nitrous oxide is an important one, and should be well understood by those who are called upon to administer it.

I find that writers differ widely upon this question. Dr. Watson, in his "Practice," vol. 1, page 434, speaking of nitrous oxide, says: "This is believed to act by mere exclusion of oxygen from the lungs and the blood. It is inhaled and exhaled again unchanged. It speedily produces unconsciousness, which as speedily passes away when atmospheric air is again admitted into the lungs. It furnishes the simplest case of the circulation of unoxygenated blood through the arteries, and therefore through the capillaries of the brain. It is the privation of oxygen, and not the presence or increase of carbonic acid, which is thus suspensive of consciousness."

Sir Humphrey Davy says, in his "Researches on Nitrous Oxide," page 324: It appears that the immediate effects of nitrous oxide are analogous to those of diffusible stimuli: both increase the force of the circulation, produce pleasurable feeling, alter the condition of the organs of sensation, and in their most extensive action destroy life.

In the mode of operation of nitrous oxide and diffusible stimuli considerable differences, however, exist. Diffusible stimuli act immediately on the muscular and nervous fibres; nitrous oxide operates upon them only by producing peculiar changes in the composition of the blood. It is reasonable to conclude that during the action of stimulating substances, from the increased force of circulation, not only *more* oxygen, and perhaps nitrogen, must be combined with the blood in respiration, but likewise more fluid nutritive matter supplied to it in circulation.

When nitrous oxide is breathed, nitrogen (a principle under common circumstances chiefly carried into the blood by the absorbents in fluid compounds) is supplied in respiration. A greater quantity of oxygen is combined with the blood than in common respiration, while less carbonic acid is evolved; hence a smaller quantity of nutritive matter is probably required from the absorbents during the excitement from nitrous oxide than during the operation of stimulants, and in consequence, exhaustion from the expenditure of nutritive matter more seldom occasioned."

Dr. E. R. Squibb, of this city, in a paper read before the Medical Society of the State of New York, says, speaking of nitrous oxide: "It does not appear to be well adapted to any other than momentary operations, chiefly because, to obtain complete anæsthesia from its use, it must be breathed nearly or quite pure, and therefore entirely cuts off the air-supply, and arrests the vital process of oxidation or aëration of blood in the lungs. Under these circumstances, when the store of oxygen which the blood contained at the commencement of the inhalation is exhausted, death must supervene. This being rather a negative than a toxic

influence, however, the re-admission of air to the lungs very speedily corrects it, provided the narcosis has not progressed so far as to arrest the mechanical movements of respiration or circulation."

My own views do not differ materially from these of Dr. Squibb, except that with the means now at hand for its proper administration, which were not in use when Dr. Squibb wrote his paper, anæsthesia *may* be continued for the more protracted operations. In order to produce insensibility by inhaling this gas, atmospheric air must be entirely excluded. The gas not being decomposed at the temperature of the blood, its oxygen does not enter into the composition of the blood, but, as Dr. Watson says, acts by excluding oxygen from it; hence its continuous administration *would* be incompatible with the existence of life. By the admission of atmospheric air at intervals, however, oxygen may be supplied in sufficient quantities to keep within the bounds of safety, and by this means anæsthesia may be continued as long as may be desired.

It will at once be seen from this, that none but experienced persons should attempt to administer this agent. The usual apparatus for giving it is of such a nature, that it is almost impossible to prevent some air gaining access to the lungs. The subjects themselves will generally become so restless, if carried beyond the proper point, that by their involuntary struggles they will compel the suspension of its administration; no doubt thus saving their own lives, and the reputation of the unqualified administrator.

The fact that it has mainly been used for the short operations, in which only momentary anæsthesia was required, the operation being performed and the patient allowed to recover immediately, is, perhaps, one reason why there have been so few fatal results from its use in inexperienced hands.

If the attempt is made to continue its administration beyond the point just stated, there will be such unfavorable symptoms manifested as to be unmistakable to any one of intelligence; but if the subject be allowed a few inhalations of air before reaching this point, the administration may be resumed, and, by means of a valve which permits the alternate breathing of the gas and air, its effects may be kept up.

It is a common impression—obtained, probably, from seeing it administered at lectures—that nitrous oxide produces all sorts of ridiculous demonstrations on the part of the subject, and develops erotic tendencies, etc. This is greatly magnified; such cases are extremely rare, and I cannot recall an instance where a lady has used an expression, on recovering from its effects, that she need blush for. The patient usually

drops quietly asleep, and as quietly recovers, and the more calm the condition of the patient, the better. I frequently have occasion to send patients away, who come to me overwrought with excitement at the thought of doing that which is, to them, such a serious thing as taking the gas.

Having read some frightful account of death from anæsthesia, produced by chloroform, and being informed of the death of "Miss A. three months after taking gas," and that "Miss B. never has been the same person since taking it," the subject is presented in a most unenviable condition, and should the administration of the gas be successful, the reaction is commensurate with the previous excitement, and then, of course, this is most improperly laid to the gas. These, however, are the exceptional cases, and I speak of them only to impress the importance of confidence on the part of the subject, and a quiet frame of mind. To insure this, I have adopted the method of delaying the operation in such cases when it was possible to do so, using some means to quiet the nervous system. Much can be done in this direction by the profession, by creating a feeling of confidence in the community, and by this means a vast amount of mental as well as physical suffering alleviated.

I am strongly inclined to think the time will come when this agent will supersede all others in the minor operations in surgery; but its expense will probably be a bar to its use in most of the protracted operations. I cannot close this part of the subject without calling attention to the use of this agent in obstetrical cases, and especially those cases which contraindicate ether and chloroform; in these cases I think it could be used with advantage, especially when necessary to use the forceps. In all cases of minor surgery, I believe the operator will not only consult his own comfort and convenience, but that which is of still more importance, that of his patient, by its use.

With reference to the more protracted operations, I cannot speak from experience; but Dr. Sims has used it in cases of ovariotomy and other operations, and, where expense is not a consideration, I see no reason why it should not be used.

It usually takes about five gallons of the gas to produce anæsthesia, and if the operation is a short one, the patient may be allowed to recover immediately by removing the inhaling tube and allowing atmospheric air to be breathed, and instead of the nausea and unpleasant effects which so often follow the administration of ether—besides the longer time required for recovery—the patient in a minute or two returns quietly to consciousness.

A case was brought to my office a short time ago for an operation of

an exceedingly painful nature, if performed when conscious. The gas being administered, the operation was performed; and while the operator was picking up his instruments, the patient recovered, expressed his pleasure, bade us "good morning," and passed out of the house before the instruments were in place.

To a busy man, whose time is valuable, its advantages in this respect are not to be overlooked. Many are disposed to look upon the extraction of a tooth as a simple matter; but I believe there is more strain upon the nervous system in this than in many of the other operations of minor surgery, and yet it is no uncommon thing for persons to go into an office, take the gas, have from one to ten teeth removed, and be upon the street again in less than fifteen minutes. Could this be done with ether?

I have recently given it for an operation in a case of hydrocele, for a fistula in ano, and for a number of the shorter operations, such as lancing felons, etc., and have been led to believe by professional friends that the medical profession in general have not adapted this agent nor familiarized themselves with its use as much as they might do with great advantage.

A few words with reference to the improved apparatus for its administration may not be amiss. The old method, or the one first in use, was to use a bag containing from four to seven gallons of gas, and by inhaling from and exhaling into the bag anæsthesia was produced, and as it often requires from twelve to eighteen inhalations to produce anæsthesia, it will at once be seen that the contents of the bag must become mixed with the carbonic acid gas and other impurities thrown off with each exhalation, and these must be re-inhaled. The method now adopted is that of using a valve mouthpiece, from which the subject breathes nothing but the pure gas, a valve opening at each inhalation, while another escape valve leading to atmospheric air closes, and during exhalation, the feed valve, or valve from the apparatus, closes, and the escape valve opens, so that at each exhalation all that has previously been taken into the lungs is thrown off, thus obviating the objection of the old method, that of breathing over and over the same gas, with its impurities. Since the discovery of the liquefaction of nitrous oxide, an apparatus has been constructed for its administration which is much more convenient than anything formerly in use, so that a surgeon can conveniently take it to the house where he proposes to operate. I thought the best way to demonstrate to you what this apparatus is, would be to bring my own with me.

It is the most complete one I have yet seen, and, as you will see, is comparatively small, weighing about twenty pounds. The cylinder con-

tains what represents one hundred gallons of the agent, in the gaseous form, with a bag attached; the case also containing the necessary pipe and valve mouth-piece, the whole being most complete and compact. The cost of the case is forty-two dollars with the cylinder filled with the gas, and the expense of refilling is six dollars.

It usually takes, as I before said, from three to five gallons of the gas to produce anæsthesia, so that it will be seen at once what the cost would be in each case for a short operation, in which it was not necessary to continue the state of anæsthesia.

The prevalent and erroneous impression that the gas must be freshly made, arose from the fact that by the old method of making the gas it was conducted into large rubber receiving bags, and in a short time became vitiated; but placed in a perfectly tight metallic receiver over pure water, it may be kept for several days, and in the cylinder, in the liquid form, for an indefinite length of time.

There are many phases of this subject which I have not had the time to go into, and I have already taxed your patience much longer than I originally intended; but hope I have been able to demonstrate that, in proper hands, we have an agent in nitrous oxide which is safer, pleasanter, and therefore better, than any other, for the minor operations in surgery.

A DRESSING FOR FRACTURED CLAVICLE.

BY G. WACKERHAGEN, M.D.

The principle is that of Dr. Sayre. The material used is common muslin instead of adhesive plaster.

It is easily applied, and, I think, more comfortable to the patient, especially during the hot weather in summer.

The method of application is as follows, viz.:

1st. A ring of muslin stuffed with cotton to encircle the sound shoulder.

2d. A piece of muslin about sixteen inches wide, four times folded, and sufficiently long to permit of its being looped round the arm and the ring posteriorly.

3d. Another piece of muslin of about the same width is folded twice, and sewn at one extremity, into which the elbow, fore-arm and hand, are

placed. The other extremity is then drawn under and through the ring anteriorly, when it is reversed, passed under the fore-arm and elbow, and fastened to the ring posteriorly.

CHRYSOPHANIC ACID AND PSORIASIS.

DISCUSSION.

——Dr. E. R. Squibb.—Very favorable accounts of the use of this acid come to us in the foreign journals, particularly in the *Lancet;* but I am not aware that any trials of it have been made in this country. The Goa powder, an oriental importation of unknown manufacture, has also been much used abroad in similar affections, and with like success. This powder contains 85 *per cent.* of chrysophanic acid. The reported experience with these articles will abundantly warrant the American physicians in making use of chrysophanic acid in psoriasis, and I wish to suggest that powdered rhubarb, which contains from one to two *per centum* of the acid, as coloring matter, may be used instead of the imported high-priced articles. Rhubarb may readily be made into an ointment by rubbing it up with simple ointment. Phosphorus is administered internally, with apparent benefit, up to a certain point; it then loses its effect.

Dr. Tilbury Fox, a very high authority, has recently advised the use of this acid in favous disease of the scalp. But in this section there will be little disposition to adopt this advice, by reason of the efficiency of carbolic acid, made known by the thorough experimentation of the late Dr. R. C. Stiles, of this city. He was able to produce, by inoculation, some very fine ringworms on his own arm, and then would cut them in two, three or four, by drawing a camel's-hair pencil across the circle, this pencil being charged with carbolic acid, and to abolish them or cultivate them at will. For some reason the treatment of *tinea*, by carbolic acid, does not hold a prominent place in Great Britain; possibly it has not been made known.

Dr. Stiles never completed his observations in this direction. He had a theory that any treatment that would thoroughly exclude oxygen from the diseased surface, and thus asphyxiate the plant, would effect a cure, and he had further experiments in view by means of glycerine and other non-evaporable applications. So far as known these studies were not concluded. I believe that it has been argued, in regard to the suc-

cessful application of sulphurous acid to the affections of the scalp, that the deprivation of the parasite of its oxygen accounted for the success.

——Dr. Sherwell.—Dr. Piffard and other dermatologists in New York have made use of chrysophanic acid with no great amount of success. I find no favorable reports in the best German literature. I think enthusiasm is yet premature.

——Dr. Pilcher.—A case of inveterate tinea circinata, in my practice, has been apparently cured by this acid. The first application caused considerable irritation, but marked improvement followed. The acid is a light, fine powder, that is readily blown off the surface whereon it is applied. I therefore moistened the part thoroughly with glycerine. This caused the powder to adhere.

——Dr. Wight.—I rely far more upon internal than external treatment in the skin diseases mentioned. Among other drugs that I have given has been rhubarb with soda, and with apparent advantage. Syphilis is always to be suspected, and the iodides always held in readiness. I have cured porrigo by sweet oil and cod-liver oil used externally. What is useful when the hair falls?

——Dr. Walker.—My attention having been called to kerosene as a remedy for this condition, I have employed it with satisfaction. In a number of cases the hair has been replaced.

——Note.—A late number of the *British Medical Journal* has an article by Mr. Balmanno Squire, confirming his previously reported successes with chrysophanic acid. He also advocates the further use of phosphorus internally.

PATHOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY.

Regular Meeting, March 22d, 1877.

The President, Dr. Rockwell, in the chair.

CEREBRAL HEMORRHAGE, DEATH, DIFFUSE END-ARTERITIS.

Dr. Shaw presented, for Dr. Colton, the following history, with microscopic sections:

A. B., male, æt. about 50; had an attack of partial paralysis on right side about one year ago. Recovered, but could not leave the house after that.

Had intense headache one evening, and before midnight he was found in a convulsion, and, Dr. C. being called, was present when several occurred. The fits recurred, with very temporary remissions. Dr. C. gave chloroform, which quieted him, and the convulsions ceased, leaving him comatose, with stertor.

The coma continued next day and night, but on the morning of the next day he became somewhat conscious, and manifested pain when hypodermics were administered. The conjunctiva of the left side was found sensitive, while that of the right was not.

The patient again became comatose, but was not convulsed, and died that night at 12—48 hours after first convulsion.

Dr. Shaw found a hemorrhage into the extra-ventricular portion of the R. Thalamus Opticus, the island of Reil being pultaceous and bloody.

The hemorrhage had passed to the base of the brain, under the arachnoid, and the medulla and pons were surrounded by clots.

Microscopic sections were shown from an artery at base of brain, showing *diffuse endarteritis*. The vessels were very white, but not fatty. There was no evidence of endocarditis. The previous history was that of alcoholism.

INTRA-THORACIC ABSCESS PROTRUDING THROUGH THE CHEST-WALL—DEATH.

Dr. Westbrook presented portion of chest wall from a young Italian, dead at the Long Island College Hospital. There was no history. He was emaciated, and had fever. R. chest dull all over posteriorally, and tympanitic in front. No lung sound could be heard on that side.

The 3d R. intercostal space bulged, as if from an abscess. The patient was moribund, and was not carefully examined. Death ensued in a few hours. At the autopsy a cavity was found under the M. Pect. Minor, containing no fluid, but communicating with a large lung cavity, full of stinking fluid—the whole lung being apparently converted into a huge abscess.

Had the patient had strength to have lived a short time longer, it would have been one of those *rare* cases where a phthisical cavity opened externally. On the left side was acute pleuritis; but the lung was normal. He had slight pericarditis, and a fatty liver.

Dr. Sherwell had seen a child of twelve years, with swelling and fluctuation over left apex, and subjacent consolidated lung, but now said to be doing well.

Dr. Pilcher had seen, five years ago, an oldish person, with R. pleuro-pneumonia, followed by hectic, and finally by two swellings, one at R. ant-axillary fold, and one over region of liver, pressure on *either* render-

ing the other tense. The lower one finally opening, death followed from copious suppuration.

This, probably, was empyema. The specimen excited much discussion. Dr. Rushmore suggesting it might be a case where caries of the rib had produced lung adhesion and subsequent abscess.

Dr. Westbrook replied that the consolidation was fibrous and cheesy, and the whole lung adherent. There was no tubercle of the other lung, and this was the only time he had ever seen the *whole lung* destroyed in this way. The large cavity did not appear to communicate with the trachea.

Dr. Giberson did not find any more softening of the rib than the maceration in the pus would account for.

EMBOLISM OF POPLITEAL ARTERY—DEATH.

Dr. Vrooman presented a specimen, with the following history:

Mrs. S., 73, had heart disease (aortic or mitral) for a long time. Several years ago had paralysis of one hand, disappearing entirely after eight months.

On the night of March 14th, 1877, was awakened by sudden sharp pain in left leg, below knee, the pain increasing, and the circulation in limb being almost entirely stopped, it being very cold. Dr. V. saw her on 15th, eight hours after the attack.

Had great pain. P., 80, feeble; T. body, normal. Left leg, below knee, paralyzed; very painful and very cold, with very slight sensation, being almost anæsthetic. Patient in all other ways healthy.

Popliteal embolism diagnosed: Prognosis, bad, being too feeble to stand either pain or operative interference.

Opiates were exhibited, and everything possible done to delay the lethal termination. Mortification set in after thirty hours, and death followed fifty-two hours after the lodgment of the embolus.

By the patient's request, a blood-vessel was opened before burial, to ascertain undoubtedly the fact of death.

Dr. Jewett operated, by my request, and secured the popliteal artery, herewith presented. It contains the embolism, being filled on proximal side of the plug by a coagulum, as far up as the tendon of the M. adductor magnus, where it was divided for removal. Below the embolus, the artery was empty; this being impacted at the origin of the anterior tibial.

Dr. J. C. Shaw spoke of Weir-Mitchell's cases, where sudden pain in skin or muscle was followed by redness, and sometimes ecchymosis, and the diagnosis of capillary embolism had been made.

In the executive session Dr. J. C. Shaw was elected a member.

Dr. L. S. Pilcher was proposed for membership.

N. B. Sizer, *Secretary.*

Kings County Pharmaceutical Society.

OFFICERS:

GEORGE C. CLOSE.....*President.*
G. M. BAKER.....*First Vice President.*
CYRUS PYLE.....*Second Vice President.*
L. D. SHEETS.....*Third Vice President.*
LOUIS E. NICOT.....*Secretary.*
R. J. OWENS.....*Treasurer.*
GEORGE A. NEWMAN, GEORGE H. NORFALK, HOWARD M. GROSS.....*Censors.*
L. T. PERKINS, S. CHICHESTER, THOMAS JONES, E. THEALL, JR., B. V. B. LIVINGSTON.....*Elective Trustees.*

TRANSACTIONS.

The regular monthly meeting was held at Granada Hall, Myrtle Ave., on Tuesday, Nov. 20th. The President, MR. GEORGE C. CLOSE, in the chair. There were about sixty members present. Messrs. J. W. Kimball, F. C. Covely, J. Williams, and C. R. Paddock were proposed for membership, and their applications referred to a committee.

The subject of changing the name of the Society to "Long Island" or "Brooklyn," which had been under consideration for some time, was finally disposed of, a large majority voting against the proposed change.

Messrs. Lahey and Pyle were appointed a special committee to thoroughly investigate the subject of EARLY CLOSING and report upon its practicability.

The committee, which had been previously appointed to draft a DRUG LAW, and whose report had been adopted, was empowered to take such steps as they might deem necessary to secure its passage by the next legislature.

DR. E. R. SQUIBB showed a sample of GUM GHEZIRAH, "in sorts,"

stating that it was an inferior quality of Acacia gum, now much used to adulterate gum arabic. He called attention to the fact that it could not be distinguished by inspection from true gum arabic. "This," he said, "in common with the beautifully white gum *Gedda* or *Senaar*, and other inferior gums used to adulterate the true gum arabic, makes a thinner, weaker and more acid mucilage which does not serve the purposes of the Materia Medica as well nor keep as well as the thicker mucilage of true gum arabic—the true gum arabic being alone admissable as the officinal Acacia.

Mr. Menninger showed specimens of Vaseline, one freshly bought and the other from a bottle that had been in use for some time. He called the attention of members to the absence of odor in the fresh parcel, and the very distinct odor of the older parcel, an odor resembling that of rancidity in fats. He remembered that this parcel, like the fresh one, was odorless when bought, and as the odor had been developed by age precisely as it is in fats, the inference was that the change was of the nature of the rancidifying process, and therefore that the statements that the substance did not rancidify or become objectionable for pharmaceutical uses by keeping, were not trustworthy.

Mr. Newman stated that the ingredients in prescriptions were sometimes ordered by minims and sometimes by drops, and asked what might be the practice of members in dispensing these quantities, in view of the fact that the size of the drops could never be twice alike, even of similar liquids from the same bottle, when more or less liquid, might be in the same bottle. This inquiry led to a free interchange of the knowledge and practice of those present in regard to the great uncertainty of dispensing quantities by drops, and elicited the fact that, with few exceptions, the practice was to follow the prescription accurately; that is, where drops were prescribed to dispense drops, and minims only where they were ordered. One or two never dispensed by drops at all, but always gave minims, even when drops were ordered. The former of the two practices was clearly the sense of the Society upon the subject.

The following formula was read by Mr. Menninger, who stated that it was frequently prescribed under the name of "Tr. Aloes Aq.," or "Mixture Aloes Comp."

Aloe Soc., 1 ounce.
Sodæ Bicarb., 1½ ounces.
Glycerine, 2 ounces.
Tr. Lavend. Co., 2 ounces.
Ol Menth Pip., 25 gtt.
Aqua, 1 pint.

DR. SQUIBB thought "Solutio Aloes Comp." would be a more proper name.

Some fine specimens of benzoated lard were exhibited, and various methods of preventing lard from becoming rancid were discussed.

The meeting thereafter adjourned until the third Tuesday of December.

LOUIS E. NICOT, *Secretary.*

DRAFT OF THE PROPOSED LAW GOVERNING THE SALE OF DRUGS AND POISONS IN THE CITY OF BROOKLYN.

WHEREAS, the business of vending, compounding and dispensing drugs, medicines and poisons requires for its proper and safe discharge a very considerable degree of scientific knowledge and practical experience; and whereas, without such qualifications, said dispensing, compounding and vending is attended with danger to the health and lives of the community; and whereas, existing laws, as applicable to the city of Brooklyn and county of Kings, afford no adequate protection either to the community of said city and county, or to those skilled and experienced in said business; therefore, we, the members of the Kings County Pharmaceutical Society, acting under charter from , respectfully request of our representatives in Senate and Assembly the enactment of the following law:

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1st. It shall be unlawful, from and after the first day of one thousand eight hundred and seventy , for any person, unless a registered pharmacist within the meaning of this act, to open or conduct any pharmacy or store for retailing, dispensing or compounding medicines or poisons, or for any one not a registered pharmacist to prepare physicians' prescriptions, except under the supervision of a registered pharmacist in the County of Kings.

SECTION 2. Any person, in order to be registered, shall be either a graduate in pharmacy, a graduate in medicine, or shall, at the time of the passage of this act, have had ten (10) years' practical experience in the preparation of physicians' prescriptions and in compounding and vending medicines and poisons, or shall be a licentiate in pharmacy.

SECTION 3. Graduates of pharmacy and graduates of medicine, under the requirements of this act, must have had at least four years' experience in stores where prescriptions of medical practitioners have been compounded, and have obtained a diploma from some legally constituted college of pharmacy or medicine. Pharmaceutists claiming the right of registration under this act, on account of practical experience, shall show to the satisfaction of the Board of Pharmacy, to be created by this act, that they have had ten (10) consecutive years' practical experience in the preparation of physicians' prescriptions, and in compounding and vending medicines and poisons. Licentiates in pharmacy must have had four years' experience in stores where prescriptions of medical practitioners have been prepared, and shall have passed an examination before the Board of Pharmacy of the County of Kings, or before any other recognized Board of Pharmacy.

SECTION 4. The Board of Pharmacy of Kings County shall consist of five members, two of whom shall be pharmacists qualified for registration as aforesaid, to be

elected by the Kings County Pharmaceutical Society, at a special meeting to be called for the purpose, within two weeks after the passage of this act; two practitioners of medicine, to be elected by the Kings County Medical Society at its next stated monthly meeting after the passage of this act; and a pharmacist, who shall also be Secretary of the Board, to be elected by the joint ballot of the members elected as herein provided for.

The members of this Board shall, within thirty days after their election as aforesaid, individually take and subscribe before the clerk of the County of Kings, an oath faithfully and impartially to discharge the duties prescribed for them by this act. They shall hold office for the term of three years and until their successors are duly elected and qualified, and, in case of vacancy, it shall be filled in manner herein provided.

The Board shall organize for business by the election of a President, to serve for the full term. The Board shall meet at least once every three months, and three members shall constitute a quorum.

The duties of the Board shall be to examine and register pharmacists in the regular order of their application, to transact all business pertaining to the legal regulation of the practice of pharmacy in said county, and to examine into and adjudicate upon all cases of alleged abuse, fraud, malpractice or incompetence; and it shall be competent for the said Board, by a vote of three-fifths of its members, to suspend or revoke the registration of any practicing pharmacist after due notice and trial before all the members of said Board.

It shall be the duty of all persons, not exempt therefrom by the provisions of this act, to appear and apply for examination within thirty days after the organization of the Board. And any person so applying shall furnish to the Board satisfactory evidence that he has had at least four years' experience in the compounding of physicians' prescriptions, and in the general duties of pharmacy, and shall pay to the Secretary of the Board a fee of five dollars. And should he pass such examination satisfactorily, he shall be furnished with a certificate as to his competency and qualifications, signed by the members of the Board of Pharmacy, which certificate shall be his warrant for registration. In case of failure to pass a satisfactory examination he shall be granted a second examination without the payment of further fee.

SECTION 5. It shall be the duty of the Secretary to keep a book of registration at some convenient place, of which due notice shall be given through the public press, in which shall be entered, under the supervision of the Board, the names and places of business of all persons coming under the provisions of this act, and a statement, to be signed by the person making the application, of such facts in the case as he may claim to justify his application.

The fee for registration of those in business for themselves shall not exceed two dollars, and for those in the employ of others shall not exceed one dollar.

The Secretary shall give receipts for all moneys received by him, and pay over the same to the Treasurer of the Kings County Pharmaceutical Society, taking his receipt therefor, which moneys shall be used for the purpose of defraying the expenses of the Board of Pharmacy, and any surplus shall be for the benefit of said Society.

The salary of the Secretary shall be fixed by the Board, and shall be paid out of the fees for examination and registration.

SECTION 6. Every registered pharmacist, from and after the day of , eighteen hundred and seventy , shall be held responsible for the quality of all drugs, chemicals and medicines he may sell or dispense, with the exception of those sold in the original packages of the manufacturer, and also

those known as "patent medicines;" and should he knowingly, intentionally and fraudulently adulterate, or cause to be adulterated, such drugs, chemicals or medicinal preparations, he shall be deemed guilty of a misdemeanor, and, upon conviction thereof, be liable to a penalty not exceeding one hundred dollars, and, in addition thereto, his name shall be stricken from the register.

SECTION 7. It shall be unlawful for any person, from and after the day of , eighteen hundred and seventy , to retail any poisons enumerated in schedules A and B, as follows, to wit:

SCHEDULE A.

Arsenic and its preparations, Corrosive Sublimate, White Precipitate, Red Precipitate, Biniodide Mercury, Cyanide of Potassium, Hydrocyanic Acid, Strychnia, and all other poisonous vegetable Alkaloids and their Salts, Essential Oil, Bitter Almonds, Opium and its preparations, except Paregoric and other preparations of Opium containing less than two grains to the ounce.

SCHEDULE B.

Aconite, Belladonna, Colchicum, Conium, Nux Vomica, Henbane, Savin, Ergot, Cottonroot, Cantharides, Creosote, Digitalis and their pharmaceutical preparations, Croton Oil, Chloroform, Chloral Hydrate, Sulphate of Zinc, Mineral Acids, Carbolic Acid and Oxalic Acid, without distinctly labeling the bottle, box, vessel or paper, in which the said poison is contained, and also the outside wrapper or cover, with the name of the article, the word "POISON," and the name and place of business of the seller; nor shall it be lawful for any person to sell or deliver any poison enumerated in said schedules A and B, unless upon due inquiry it be found that the purchaser is aware of its poisonous nature, and represents that it is to be used for a legitimate purpose. Nor shall it be lawful for any registered pharmacist to sell any poisons included in schedule A before delivering the same to the purchaser, causing an entry to be made in a book kept for that purpose, stating the date of sale, the name and address of the purchaser, the name and quality of the poison sold, the purpose for which it is represented by the purchaser to be required, and the name of the dispenser; such book to be always open for inspection by the proper authorities, and to be preserved for reference for at least five years. The provisions of this section shall not apply to the dispensing of poisons, in not unusual quantities or doses, upon the prescriptions of practitioners of medicine.

SECTION 8. Nothing contained in the foregoing sections shall apply to, or interfere with the business of any practitioner of medicine who does not keep open shop for the retailing of medicines and poisons; nor with the business of wholesale dealers, excepting section seven, and the penalties for its violation.

SECTION 9. Any person who shall attempt to procure registration for himself, or for any other person, under this act, by making or causing to be made, any false representation, shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be liable to a penalty not exceeding five hundred dollars.

Any registered pharmacist who shall permit the compounding and dispensing of prescriptions of medical practitioners in his store or place of business by any person or persons not registered, except under the supervision of a registered pharmacist, or any person not registered, who shall keep open shop for the retailing or dispensing of medicines and poisons, or who shall fraudulently represent himself to be registered, or any registered pharmacist or dealer in medicines who shall fail to comply with the regulations and provisions of this act, in relation to retailing and dispensing of poisons, shall for every such offense be deemed guilty of a misdemeanor, and, upon conviction thereof, be liable to a penalty of fifty dollars.

SECTION 10. Each and every penalty recovered under this act shall be paid to the Trustees of the Kings County Pharmaceutical Society, for the benefit of the Society.

SECTION 11. All previous acts and parts of acts, applying to the County of Kings, relating to the practice of pharmacy and the sale of poisons, are superseded by this act, and are hereby repealed.

SECTION 12. This act shall take effect immediately.

G. M. BAKER, *Chairman.* H. J. MENNINGER.
L. E. NICOT. G. A. NEWMAN. } Committee.
E. A. SAYRE, *Secretary.* G. C. CLOSE, *Pres. ex officio.*

Ἀσκληπιὸς ὁ Σωτὴρ

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυναων.

Hymns of Homer, No. XVI.

ITEMS.

——THE OCTOBER number of THE PROCEEDINGS has been distributed so widely that we are no longer able to supply any demands for them. Any one having a copy to spare will confer a favor by so informing us.

——THE EDUCATED PHYSICIAN is the peer of any one; no one can stand higher than he. So true is this that a well-known and talented physician of England, on his return from a visit to America, remarked in an address, that while in the United States there is no class known as the nobility, and hence no real aristocracy, yet that the medical profession might justly be regarded as the true aristocracy of the republic.—Dr. W. B. Atkinson, on *Medical Organizations and their Value.*

——UTERINE SOFTENING, as a factor in the etiology of uterine distortions, and as a cause of impaired power of locomotion, is the subject of a paper in the *Brit. Med. Jl.*, Nov. 3, by Dr. Graily Hewitt. Abnormal softness of the uterus is concomitant with general debility, and is essentially a

mark of mal-nutrition of the organ. This condition of softness predisposes the uterus to alterations in shape; and these, in turn, tend to create either pain, tenderness or discomfort. Hence, walking or the erect posture causes discomfort. The writer comes to the conclusion that rest, tonics and nutrients are of prime importance. He also adopts appropriate mechanical measures. We are reminded, in these conclusions, of the fat-and-blood-making treatment, which Dr. S. Weir Mitchell, of Philadelphia, has extolled so highly in connection with prolonged recumbency, for the relief of the confirmed invalidism of neuræsthetic females. These two authors should be read together and compared.

——For Physicians' Offices, no more convenient, ingenious and ornamental piece of furniture can be found than the Danner Revolving Bookcase; the cost not extravagant. The case is "handy," moves easily and revolves noiselessly; and its space is most economically employed. A friend of ours has had built for him a revolving case for surgical and gynecological instruments and other *minutiæ* that are apt to clutter the desks of physicians; this case for implements is divided up into drawers and miniature cupboards, instead of shelves. An example of the revolving book-case may be seen at our new reading-room.

——McComber Patent Last.—Boots and shoes made on this last have a decided advantage, from the fact that they are made upon pure physiological principles, conforming to all the inequalities of the foot, or in other words the boot is made to fit the foot, and not the foot the boot.

——Sewer-Gas.—Very valuable information on the subject of sewer-gases was communicated by Dr. Frankland at the February meeting of the Royal Society. The direct connection of the outbreak of pestilential diseases with the exposure of a locality to the gases from sewers was shown by some remarkable instances. The conclusions from careful experiment are that the ordinary and proper flow of sewage does not so agitate the liquid that the gases will escape; but if the flow is checked and the sewage stagnates, the deleterious gases will certainly be evolved. Hence it is of prime importance that a steady and even flow should be kept up at all times through sewers.

——Heart-clot in Diphtheria.—The most important part of the treatment (Hospital of Univ. of Pa.), is prophylactic. There is no remedy known which will avert this dreadful accident, but there is little doubt that, by restraining the cardiac tone and by guarding against all muscular exertion—especially sitting up or rising to the feet—the danger may be lessened. If it becomes evident that heart-clot has formed, the only treatment is active stimulation of the tone of the heart; ammonia is

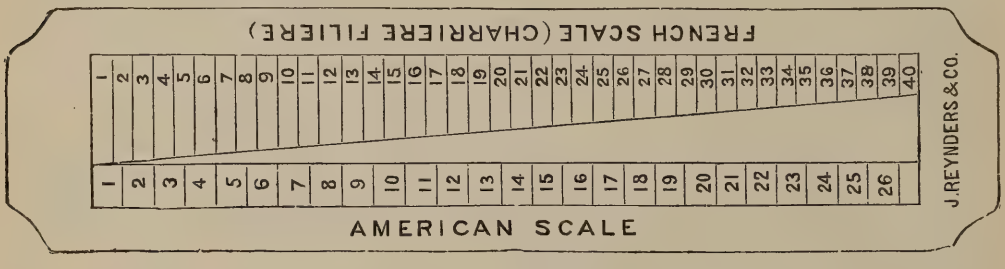
valuable, and alcohol and concentrated nourishment must be given freely as called for by the prostration and depression of circulation. More reliance is placed on digitalis, freely administered, than upon any other remedy.—*Med. Times*, Oct. 13th.

A New Adhesive Plaster, especially adapted to the requirements of modern surgery, has been studied out by Dr. H. A. Martin, of Boston. It will be prepared by Messrs. T. Metcalfe & Co., who will present a specimen of the plaster to any physician who may apply, either personally or by letter. The ingredients of the plaster are the best Para rubber, Burgundy pitch, and balsam of tolu. The cloth undergoes an antiseptic treatment by liq. zinci chloridi before the compound is spread upon it.

——The sense of smell may, according to Dr. Dupuy, of New York, aid in the diagnosis of tubercular meningitis; patients having that disease emit an odor closely resembling wet linen. The odor in tetanus, on the other hand, is that of a wet cloth coat.—Letter of Dr. P. B. Porter to the *Med. Times*, Nov. 10th.

——Gynecological Transactions, Vol. II., is announced for December 1st, 1877. Price, $6.50. Subscriptions left at our rooms will be attended to promptly.

——Chloral by Enema.—Certain experiments with chloral go to show it can be taken up by the absorbents of the lower bowel with nearly the same energy as by the stomach. In a case of puerperal convulsions, a solution of chloral and brom. potas. was injected per rectum, with the result of allaying spasm promptly and decidedly. Thirty grains in two or three ounces of water will commonly suffice for a first injection.



The accompanying cut represents (half size) a simple, convenient and accurate "catheter gauge," devised by Dr. Handerson, of New York city. It consists of a metal plate, perforated by a triangular opening 169.33 mim. (6.67 in.) in length, with a width at the base of 13.33 mim. (0.525 in.) This opening is graduated to both French (Charrière) and American (Van Buren) scales, while the reverse side of the plate contains the nearest approximation to the so-called English

scales, with a comparative scale of English inches and French millimetres. The catheter, sound, etc., to be measured, is simply inserted in the base of the opening, and slid towards the apex as far as it will go, when the parallel lines will at once indicate its size according to either scale. (*Medical Record, No. 361*).

——PETROLEUM AS A HAIR INVIGORATOR—"The British Consul at Nicolaieff, Russia, is said to have discovered that petroleum is the greatest of all hair invigorators. In a report to his government he says that a servant formerly in his employ was prematurely bald. The servant was engaged to trim lamps, and had a habit of wiping his petroleum-besmeared hands in his scanty locks. Three months of his lamp-trimming and dirty habit procured for him a much finer head of black glossy hair than he possessed before his baldness. The consul tried the remedy on two Spaniards who had become suddenly bald, and met with the same wonderful success. He then suggested his petroleum cure to the owners of some black cattle which had become bald, and to the possessors of horses which had lost their manes and tails. The remedy not only prevented the spread of the disease from which the animals suffered, but also effected a quick and radical cure. The petroleum, he says, should be of the most refined American quality. It is to be rubbed in vigorously and quickly with the palm of the hand, and applied at intervals of three days—six or seven times in all—except in case of horses that have lost tails and manes, when more applications may be requisite. The experiment will not be wholly a new one in this country. It was remarked, however, that a majority of the people who went into the oil regions when petroleum speculations were at the highest, came out bald-headed and with a tired appearance. On the other hand, a well-known and popular unguent for the hair is asserted to be one of the new petroleum products."—*The Tribune.*

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The December meeting will be held on the 17th, at which there will be presented the following papers:

Reason *versus* Tradition in the treatment of certain injuries to the Wrist Joint, by L. S. Pilcher, M.D.

Some practical points in the operation for Strabismus, by A. Mathewson, M.D.

Breech Presentations, by J. E. Clark, M.D.

At this meeting nominations will be made for officers of the Society for the year 1878.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1877.

President.....Alex. Hutchins, M. D., 796 DeKalb Av.
Vice-President.....C. Jewett, M. D., 310 Gates Av.
Secretary.....R. M. Wyckoff, M. D., 532 Clinton Av.
Assistant Secretary.....N. B. Sizer, M. D., 336 Greene Av.
Treasurer.....G. G. Hopkins, M. D., 375 Grand Av.
Librarian.....W. W. Reese, M. D., 193 Joralemon St.

CENSORS.

J. D. Rushmore, M. D., (Senior Censor), G. W. Baker, M. D., R. M. Buell, M. D., J. H. H. Burge, M. D., F. W. Rockwell, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

(1874 to 1878.)

Drs. J. Byrne, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. L. Zabriskie, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. A. N. Bell, T. P. Corbally, J. Walker, W. E. Griffiths, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, W. E. Griffiths, J. A. Jenkins, Drs. W. G. Russell, N. Matson, F. W. Rockwell. Drs. R. M. Buell, R. W. Wyckoff,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, DECEMBER 18, 1877.

REASON VS. TRADITION IN THE TREATMENT OF CERTAIN INJURIES TO THE WRIST-JOINT.

BY L. S. PILCHER, M.D.

INTRODUCTORY.

The role in life played by the hand, and the anatomical arrangements whereby it is fitted for its part, render the wrist-joint especially liable to suffer from violence.

Contusions, sprains, fractures and dislocations, in varying degree of severity and of combination, result.

Simple contusions, and the lighter sprains, producing but a trifling and temporary inconvenience, and compound dislocations and fractures, accompanied by such extensive disorganization of the parts as to demand in their treatment exsection of portions of bones, or amputation, are alike foreign to the scope of this inquiry.

Simple dislocations of the carpus upon the forearm, either backwards or forwards, but most frequently backwards, described by Hippocrates, were accepted as frequently occurring injuries by all surgeons until within the present century.

It was reserved for Dupuytren, in these latter days, to prove that these injuries were of exceeding great rarity. No case of the kind ever occurred in his experience. In all the literature of the subject from that time to this, during which inquiry has been stimulated by the positive assertions of the great French surgeon, only a half dozen incontestable cases have

been recorded. (Vide Injuries which happen to the Wrist-joint, etc. Cruse. Transac. Med. Soc. State of N. Y., 1874.)

Practically, therefore, the dislocations of the carpus, though recognized as not absolutely impossible occurrences, may be omitted from an enumeration of the injuries to the wrist-joint whose treatment need be considered. Should such an injury take place, reduction of the dislocation having been effected, the injury would be resolved into a severe sprain, and as such, its treatment would be conducted in accordance with the principles hereafter to be set forth, in connection with the discussion of such injuries. Uncomplicated dislocation of the lower extremity of the radius, or of the ulna, from their articular connections, are to be placed in the same category with dislocations of the carpus. Both very rare, that of the radius extremely so,* their treatment, after reduction has been effected, would be essentially that of severe sprains. The injuries which remain for special consideration are :

1. Severe sprains.
2. Fracture of the radius near the wrist-joint.
3. Fracture of the radius near the wrist-joint, with dislocation of the ulna, more or less complete.
4. Fracture of the radius and ulna near the wrist-joint.

PART I.

SPRAINS.

Any injury sustained by the structures composing an articulation, from movements executed by it, either in an improper direction, or to an excess in a proper direction, without displacement of the corresponding articular surfaces from each other, must be classed as a sprain. In the lighter sprains, an overstretched ligament, with perhaps some of its fibres lacerated, may constitute the sum of the damage sustained. In the more severe sprains, contused articular cartilages, torn ligaments, overstretched tendons, bruised nerves, lacerated muscles, ruptured blood vessels and infiltrating blood, combine to produce an injury of the gravest importance.

Between these two extremes every grade of severity may be presented. From all alike, by neglect, improper treatment, or a peculiar constitutional vulnerability, disastrous consequences may result.

*_Desault_ claimed to have been the first to have discovered it, and substantiated his assertions by actual dissections.

Vide Cruse., op. cit., p. 74.

Sir Astley Cooper describes it as one of the dislocations occurring at the wrist-joint. Treatise on Dislocations and Fractures of the Joints. London: 7th ed., 1831, p. 376.

Hamilton makes no mention of it in his work on Fractures and Dislocations.

"They are the fruitful source of lameness; they lead to the destruction of joints; they may be the determining factor in malignant disease; they cut a ghastly figure in the causes for amputation."*

Sprains are among the most common injuries which require surgical treatment.

The problem, How to treat them so as soonest to restore the healthy function of the joints implicated, and at the same time the most surely to prevent the development of unpleasant sequelæ, is one that has to be met by every practitioner.

On the principle that the greater includes the lesser, I shall limit my discussion to the consideration of the more severe sprains. I expect to be able to demonstrate that, in wrist-joint injuries, a wider range than has hitherto been accepted present sprain as the chief condition to be treated.

The special conditions presented by this joint are such as to render errors in treatment peculiarly liable to be followed by bad results. My views as to the indications for treatment of sprain at the wrist-joint, are based upon views entertained as to the rational treatment of sprain in general, a somewhat full consideration of which I find to be necessary as the groundwork of future argument.

To this I invite attention.

The traditional treatment of sprain, consecrated by time and honored by the authority of the great names in surgery, has turned upon the one overshadowing condition feared—*inflammation.* Rest in the treatment has been, and is, recognized as, of all things, the most important. Whatever modifications of treatment have been adopted, absolute rest to the injured joint has continued to be accepted as the point of prime importance in the early stages of treatment.

The words of Gross† are: "Great care should always be taken in the acute stage not to move the parts too soon."

Erichsen‡ formulates the treatment of sprain in the words, "Rest, perfect immobility and compression."

"Keep the joint perfectly motionless," is the caution of Billroth.§

To describe the results which may be expected in the case of severe sprains treated traditionally, I again use the words of Gross:‖

*The Pathology and Treatment of Sprains. Cowling: Louisville *Medical News*, May, 1877.

†Gross—System of Surgery, Vol. II, page 26.

‡Erichsen—Science and Art of Surgery, Philadelphia, 1873, Vol. I, page 297.

§Billroth—Surgical Pathology, Translated by Hackley, 1871, page 215.

‖Gross, op. cit., Vol. II, p. 24.

"Convalescence will be tedious, and the joint may remain weak and tender for many months, if not for several years. * * * * * Sometimes, even when every possible precaution has been adopted, it will be found that the articulation not only continues to be weak and uncomfortable for a long time, but that the corresponding limb becomes cold, wasted, flabby and exquisitely sensitive; perhaps, also, the seat of neuralgic pain, subject to severe exacerbation whenever exercise is attempted or there is a change in the weather. Occasionally, indeed, the movements of the joint are never regained."

This opinion of Gross will be sustained by general surgical experience. After a severe sprain, with every care in the use of the means sanctioned by authority and tradition, tedious convalescence and prolonged weakness and tenderness of the joint is the rule; rapid or perfect recovery the exception.

A step forward in the treatment of sprain was made by the introduction into surgical practice of the "immovable apparatus," whether of starch, or plaster of Paris, or soluble glass, whereby the surgeon has been enabled to secure continued rest, perfect immobility, and equable compression of the joint, without restricting the general movements of the patient. In the use of this means the idea of immobilization has been more especially prominent. The value of the compression which it also may be made to exert has been an after-thought, which even yet has not been generally considered, nor its full therapeutic value appreciated. Compression to hasten the absorption of effusions is an old doctrine; but compression to prevent effusion, especially in its application to a recently-sprained joint, smacks of novelty. A most energetic advocate of this mode of treatment has been Mr. Sampson Gamgee, of England. I give his own words:*

"The swelling is great, the pain intense. The orthodox treatment, by leeches and fomentations, is valueless, compared with circular compression and perfect immobilization. * * * * Not only can the patient bear well-applied pressure *from the first*, however great the swelling and acute the pain, but it may be laid down as a general proposition, to which I have never seen an exception, that in severe sprains effusion is *most surely checked*, and, once it has occurred, its absorption is most rapidly promoted, while pain is most effectually relieved, by pressure and immobilization."

Another doctrine, directly at variance with the time-honored traditions of rest and immobilization, has for some years been on trial. The words *compression, motion, use,* describe this doctrine.

In 1858 appeared a pamphlet by Dr. Peter Hood, of England, "On the Treatment of Sprained Ankle," in which this method of treatment was advocated, supported by his own experience. After thirteen years, his son, Dr. Wharton P. Hood, makes the following record of the results of such treatment:†

* Gamgee—Treatment of Severe Sprains. *Lancet*, 1876, p. 629.

† W. P. Hood, "On Bone-setting," 1871, p. 102.

"In cases of injury (to joints) we may resort to movement, either immediately or after the lapse of a few days. The *former* course has long been pursued by my father, Dr. Peter Hood, in the treatment of sprained ankle; and in his hands, and in the hands of others who have followed the practice, its effect has heen simply preventive of nearly all the troubles that such an accident so often entails."

Dr. Cowling, of Louisville, Ky., in the paper read before the Kentucky State Medical Society, on "The Pathology and Treatment of Sprains," from which I have already quoted, records an instructive experience bearing upon this Hood doctrine. I quote:

"My attention has more than once been called to the fact that immobilization is not absolutely necessary from the first, even in cases of sprain apparently severe, and I have been caused to think much upon the means of discovering where the line was to be drawn. Two of my friends got a sprained ankle within a day or so of each other, and apparently very severe sprains. One submitted to my treatment, had a plaster boot, etc., and was all right in about a month. The other declined all restraint, rubbed his purple and swollen ankle, walked out heavily upon it, as he said, the day after his accident, and continued to walk in a very short time without inconvenience. He was a soldier, of vigorous build and indomitable pluck. He told me that the accident had frequently occurred to him during the war, and he had learned from experience that this was the best treatment for him. A man upon whom I had once put a paper boot for severe sprain told me afterwards that it was 'next to the best way he ever saw of treating sprained ankle; he had had it several times, and could walk it off, if he started in from the first.' * * * * A young lady had a sprain frightful to look at, extravasation extending from the instep up to the calf. It did not pain her much, she said. In spite of my lecture upon the danger of neglect, she took off the bandage and put on a shoe the next day after my visit, escaped confinement to do her spring shopping, and had no serious result—nay, no inconvenience! * * * * A few years ago, after a sleet, three cases presented themselves to me for injury at the elbow, resulting from falls. In all of these pain and voluntary immobility were prominent symptoms. In the careful examination and frequent movements necessary to diagnosis at this joint, while I discovered that the trouble was sprain, I saw also that the patients were more comfortable after I had done with them than when I had commenced."

No wonder that the thought that immobilization might not, after all, be indispensable, should have been suggested by such an experience. An appeal to the experience of every practitioner would, I am certain, elicit recollections of refractory patients, who would persist in disobeying the restrictive orders of their medical attendant, and yet recovered with remarkable rapidity from their sprains. I shall not add details of any other cases; they might be multiplied indefinitely. My own experience I will summarize. During the past five years I have had under treatment over one hundred cases of severe sprain, chiefly of the wrist, elbow, knee and ankle. In the treatment of every one, without exception, I have adopted the method which I have denominated the "Hood" treatment—viz., compression and mobilization—and in no case have I had reason to regret it. Those cases have improved the most slowly who

would not follow the directions to move the joint fully and freely, but, from dread of hurting themselves, kept the parts at rest. In this mode of treatment, the bandaging necessary for accomplishing the compression is not only preventive of effusion, and resolvent in its action upon that which may already be present, but it also gives support to the damaged articulation, reinforcing the weakened, overstretched, lacerated ligaments; yet more, it gives protection against injury while recovery is taking place.

A yet wider divergence from the traditional treatment, with claims for still more rapid and satisfactory, even brilliant results, has been only very lately introduced by the advocates of massage. So wonderful was the success and so great the reputation obtained by Dr. Mezger, of Bonn, Germany, in the treatment, especially of joint affections, by the use of a combination of manipulations, such as rubbing, kneading, percussing and rolling of the soft parts, with passive movements, that his method of treatment, expressed by the term "massage," has attracted general attention. In this country, Dr. W. R. Fisher, in the *Medical Record* of January 1st, 1874, and Dr. Douglas Graham, in the *Philadelphia Medical and Surgical Reporter* of September 5th, 1874, first brought it to the attention of the medical profession.

Again, in the *Medical Record* of August 11th, 1877, Dr. Graham returns to the subject, with a *résumé* of three hundred and eight cases of joint contusions, or their sequelæ, treated by massage. I quote Dr. Graham's summary :*

"We have, then, the results of massage by seven independent observers, whose cases of joint contusions and distortions, sprains or their sequelæ, thus treated, amount in all to 308, of all grades of severity, of which the average length of time till recovery is 9.1 days. This time would be much less if the 39 cases were omitted in which massage was not begun until from ten days to three months had elapsed after the injury, 'in many of which,' says Berghman, 'other methods of treatment had failed,' and which required, on the average, about three weeks' massage till recovery. Of 55 cases treated by the usual method, the average length of time till recovery was $26\frac{1}{6}$ days, or nearly three times as long as similar cases required by massage. The advantages of massage, then, in such cases, would seem to be more speedy relief from pain and swelling, and earlier and more perfect use of the injured joints, than by any other method."

The details of the experience thus summarized, given in this report of Dr. Graham, are of exceeding interest, and will repay the most careful study. The following particular conclusions I find to be set forth by certain of the writers whose reports form the foundation of Dr. Graham's article :

* *Medical Record*, August 11th, 1877, p. 504.

1. The earlier after the injury massage is employed, the more speedy the recovery.—BERGHMAN.

2. Massage has an antiphlogistic and sedative effect, not an irritating one. It speedily obviates or removes blood-stasis, furthers the absorption and removal of accumulated parenchymatous exudation, as well as of the out-wandering white blood corpuscles, and thus restores the normal relations of pressure in the circulatory system.—BERGHMAN.

3. The previous application of an immovable dressing, even if but for a short time, diminishes the prospect of speedy cure by massage.—BERGHMAN.

4. The earliest possible use of the injured joints is very useful.—BERGHMAN.

5. The effects of massage are materially aided by making the patients use the injured limbs in spite of the pain.—GASSNER.

Finally, as to the value of massage in the treatment of sprains, I quote the sentiment of Dr. Rizet, which Dr. Graham has preserved to us in this same report. He says:

"Struck by the words of Baudens, at the Academy of Sciences, that 'of seventy-eight amputations of the leg, or of the foot, sixty had sprains for their origin,' it was with eagerness we seized opportunities to experiment with a means which, far from deceiving us, has given unlooked-for success. They have strongly shaken the faith we had in the therapeutics preconceived by our predecessors and our masters, in forcing us to recognize that the application of immovable bandages in acute sprains has been the most powerful cause of the deplorable effects disclosed by the venerable surgeon of Val-de-Grace."

Rest, immobilization! Mobilization, use! The Old and the New! In support of the former, venerable tradition and great authorities; in support of the latter, few names, some recent experience. Placed in the crucible of clinical observation, the results given by the former are confessedly tedious, uncertain, often unsatisfactory, sometimes disastrous; by the latter, certainly no worse—they could not well be; on the contrary, if its advocates may be believed, rapid, reliable, complete.

But no medical fallacy, from the earliest times to the present, has prevailed, which has not been able to summon an ample clinical experience in its support—nothing so preposterous or incredible, the value of which has not been apparently clinically demonstrated, and in proof of which unlimited certificates may not be marshaled. Empiricism and rationalism in medicine must be mutually corrective, if true progress and reliable inductions are to be made.

A rational discussion, then, of the treatment of sprains, based upon a comprehensive appreciation of all the pathological conditions and processes presented in such an injury, is necessary to a true decision of the

merits of different methods proposed. That method with which both empiricism and rationalism most completely square must be accepted by the scientific surgeon. No conclusion, however, can be considered as final; for the possibility will always exist either that we misinterpret what facts we have, or else that other facts exist not yet discovered by us—unknown factors, unexplored remainders, which, when they shall become known to us, will again modify our conclusions.

As bearing upon a conclusion as to the rational treatment of sprains, I submit the following theorems as principles of pathology and physiology, which need no demonstration at my hands; they are our common property—legacies received from Hunter and Paget and Simon:

Sprains are subcutaneous injuries.

In general, injuries which are subcutaneous seldom inflame.

The most obvious immediate result of a sprain is swelling of the part.

This is due partly to extravasation of blood, but usually much more to the rapid afflux of blood to and exudation of fluid from the vessels in the injured part.

This active congestion, upon its subsidence, leaves the blood vessels of the part dilated, and the blood stream more sluggish than natural for a time. If this condition is prolonged and intensified until complete stagnation of the blood current is produced, the initial condition of inflammation is supplied.

The exudation consists chiefly of serum; mingled with it is a small proportion of coagulable lymph. If inflammation be developed, the proportion of coagulable lymph in the exudate is greatly increased.

The continuance of this exudative process is limited to the first two or three days after the reception of the injury, unless inflammation supervene.

After that time, absorption of the effused fluids, more or less rapid, takes place, with complete repair of the injured tissues in due time.

The coagulable lymph suspended in the serous effusion may remain for some time fluid, and in this state may be readily re-absorbed.

By its coagulation the tissues are rendered indurated and adherent.

The damage sustained by an injured part will be in direct proportion to the length of time during which the exudation within its tissues remains unabsorbed, and opportunity is afforded for the coagulation of its contained lymph.

Absorption is hindered and effusion promoted by languor of the circulation.

Absorption is promoted by acceleration of the circulation, by diffusion of the effused fluids and by continuous pressure.

The processes of repair, including absorption of superfluous exudation, will be most active in a part which approaches nearest a condition of perfect health.

A due performance of its natural function by a part is necessary to keep it in a state of health. A prolonged suspension of its natural function will, of itself, induce disease in its structure.

An injury sustained by a part may demand temporary suspension of its function, partial or complete.

This suspension is itself an evil, and should be abandoned as soon as the use of the part to any degree will no longer prolong or aggravate the consequences of the injury.

The normal function of a joint is motion—this involves friction, pressure and stretching, to a greater or less degree, of its constituent elements.

If inflammation of peri or intra articular tissues occurs, the adhesions resulting from the organization of the inflammatory exudate will, to a greater or less degree, prevent the performance of the function of the joint involved.

Inflammatory adhesions are more easily broken up in the early stages of their formation, when soft, than later, when they have become firm and well-organized.

That adhesions should be ruptured demands full and free separation of the parts adherent. Movements to the fullest possible extent permitted by the parts are needed for the accomplishment of such an end.

A single full and free movement will accomplish fully the rupture of forming adhesions. Repeated movements are unnecessary until fresh adhesions shall have formed.

The danger of increase of the inflammation by the performance of occasional full and free movements of the parts involved is not great. It may be reduced to a minimum by proper attention during the intervals of rest.

The practical conclusions which I deduce from the principles thus set forth, are as follows:

The swelling and congestion consequent upon a sprain by no means necessarily involves the presence of inflammation.

Active hyperæmia, primary, and passive hyperæmia, secondary, constitute the essential pathological conditions present. The more intense the former, the more prolonged the latter.

The first is of short duration, not longer than three days; the duration of the latter is variable; it may be affected much by treatment; it may terminate in inflammation, in the development of which it is a most important factor.

There is no reason inherent in the nature of a sprain why the general law that *subcutaneous injuries seldom inflame* should not apply to it.

That this law should be true of any injury demands, however, two things:

1. That it be protected from further injury.

2. That it be placed in a proper condition for recovery from the injury already sustained.

The fulfillment of these two indications for treatment demands different measures in the differing pathological conditions present at different times in the course of a sprain.

The mode of treatment characterized as that of *absolute rest and immobilization* answers admirably the indications presented during the stage of active hyperæmia. It protects from further injury, lessens the amount of blood deterioration and of exudation, and diminishes the proportion of coagulable lymph in the exudation. If prolonged beyond

this first stage, while it still answers the first indication, to protect from further injury, it favors languor of the circulation, thus hindering absorption, and increasing the danger of the formation of adhesions between adjacent parts; it promotes firm organization of adhesions once formed, and contributes to degenerative changes in parts by suspension of their function. The more severe the original injury, the more intense the active hyperæmia immediately resulting, and the more serious the tendency to passive hyperæmia, its sequel. Complete disuse and absolute immobilization tends to prolong this state, and thus to increase the danger of inflammation.

The inflammation thus lighted up would be necessarily sub-acute and chronic in its character, the very result which tradition has taught us as inevitable in some cases, despite the most careful treatment.

The equal and constant pressure which the immovable apparatus may be made to exert upon the part to which it is applied is of great value in promoting absorption of exudates. It is the chief element of value which this application possesses in the treatment of the second stage of a sprain.

Mobilization and use—as typified in the processes of massage, brushing aside the first indication, viz., protection from further injury, as of comparatively little moment—afford, most admirably, the conditions favorable for recovery from the results of the injury sustained, after the subsidence of the primary active congestion. Dilated blood vessels are stimulated to contraction, the languid circulation is accelerated, absorption of effusions is promoted, adhesions are prevented, repair is rendered active, a speedy restoration of the natural function of the joint is made probable.

The appeal to reason sustains the claim to superiority which has been made for mobilization and use over rest and immobilization more particularly in the treatment of the second stage of sprains.

It has appeared, also, that this second stage is the one upon the proper treatment of which depends, in greatest measure, the result of the case. It is reasonable, therefore, to expect that the mode of treatment which most fully meets the indications of this stage will accomplish the best results in general.

The caution which Reason gives is, not that care should be taken not to move the parts too soon, but that care should be taken not to delay moving the parts too long!

Nevertheless, the rational surgeon will not neglect the indications presented during the first stage, short as it is. The rapid afflux of blood is to be checked; the blood vessels are to be stimulated to contraction; bruised and torn nerves are to be soothed; overstretched or lacerated

ligaments are to be reinforced; effusion is to be limited and pain is to be relieved.

Rest, hot water and the bandage fulfill these indications.

In the treatment of the second stage of sprain, the advantage to be derived from the compression and support afforded by a properly applied bandage may be secured in connection with the manipulations of massage, and may go far to supplement the deficiencies of the individual surgeon as a practical masseur.

It has been impossible for me to abbreviate this somewhat extended discussion of the general subject of sprains. In none of the standard surgical treatises that I have been able to consult has an attempt been made to discuss these injuries to the extent which their frequency and importance would justify, while in some of the more recent and pretentious publications they are not even so much as mentioned. The treatment of certain injuries in the neighborhood of the wrist-joint, yet to be considered, which I shall advocate, is based upon the principles which I have now presented. I could not expect assent to methods of treatment in particular cases without having demonstrated the principles upon which those methods were based.

The anatomical conformation of the wrist-joint is such, that an injury sustained by it, improperly treated, is especially likely to inflict irreparable damage. The tying together of the bones of the forearm by the inferior radio-ulnar ligaments, and by the triangular fibro-cartilage, and the attachment of the carpus by means of the anterior and posterior and lateral ligaments, presents nothing remarkable. But of equal importance with these, in giving strength to the joint and sharing in all its vicissitudes, is the mass of flexor tendons covering it in front, ensheathed in two extensive synovial sacs, and the extensor tendons spread out over it behind, running through six separate synovial investments.

The extent and freedom of its movements, and the character of its functions, expose it constantly to danger of injury.

Into the numerous superficial, extensive and delicate synovial sheaths which surround the joint, copious effusion rapidly follows an injury received; the tendons are bathed in it; extensive adhesions are possible; should inflammation be excited, a firm matting together of all the tissues results, with serious crippling of the joint.

Here are conditions which demand active and skillful treatment. Here are tissues so situated, that needed applications may be made with certainty and directness to the parts affected. Here the most important indication is clear—adhesions must be prevented.

The most important element in the treatment I conceive to be *motion;*

not restricted, not tentative, not necessarily frequent, but full, decided and at regular intervals, just as a medicine might be administered for an internal disease.

Next, *massage.* No joint in the body affords more favorable conditions for securing the full value of this process.

Next, *support* and *compression,* by the application of a bandage encircling the joint. A strip of adhesive plaster, about two inches in width, answers best for this purpose.

Rarely will it be necessary to have recourse to absolute rest and fomentations during the first two or three days following an injury; never after that time.

The consideration of the remaining injuries, including Colles' fracture and its complications, will be reserved for another meeting.

BREECH PRESENTATIONS.

BY J. E. CLARK, M. D.

The relative proportion of breech presentations to presentations of other parts of the fœtus, varies considerably, as reported from different institutions.

Scanzoni gives the number from the lying-in asylums of Prague and Wurzburg as about one in fifty-six. Grenser, in the report of the lying-in institute of Dresden for six years, one in sixty-six, while Ramsbotham, Jr., from the Maternity of London, estimates them as about one in thirty-five.

I have been unable to find any reliable statistics as to the proportion of still-born children in these presentations, but it is known to be large.

The progress of labor is much slower, both in the first and second stage, when the breech presents than it is when head presents. From the nature of the presenting part dilatation is not so readily accomplished, and the parts do not adapt themselves so readily to the pelvic cavity.

The breech is more liable to be arrested in its descent than the head. The arrest of the breech, especially in a primipara, becomes the occasion of great and protracted suffering to the mother, very probable death of the child, and a source of great anxiety to the physician. They are, in fact, formidable cases to treat, and the physician having seen one becomes very desirous to avoid another.

Inasmuch as we can never tell when we are going to have trouble in these cases, it is better to prevent the breech becoming arrested if possible.

The rule I have followed in my practice for many years now is, in all cases of breech presentations at full time, to bring down a foot. This allows complete control of the labor; we can hasten it as the exigencies of the case may require.

Dr. Robert Barnes, of London, adopted this mode of treatment in cases where the breech becomes arrested. Would it not be better to do the same thing earlier, and thus prevent hours and hours of intense agony to the mother and danger to the child?

I prefer to perform the operation before the first stage of labor is completed. It can be done then very easily, and without inflicting much suffering upon the mother. It is seldom necessary to give chloroform, though there is no objection to it if desired. After the foot is brought down the dilatation of the os uteri is more readily completed, and the duration of the labor much shorter.

There are some points as to the manner of performing the operation I would like to mention. The feet and legs occupy two different positions in these cases. In one, and the most common by far, the legs are flexed upon the thighs, which brings the feet very near the os uteri. In the other, the legs are extended, carrying the feet near the fundus of the uterus, by the side of the head. Of course, these last are the most difficult to manage, and rarely fail to give trouble if left to themselves. I have adopted the following rules:

1st. In introducing the hand into the uterus, use great gentleness with firmness, and always support the fundus with the unoccupied hand.

2d. Introduce the hand, the palmar surface of which will pass readily along the posterior aspect of the thigh of fœtus.

3d. Choose the foot most anterior.

4th. Never bring down but one foot—reasons obvious. It leaves protection for cord, and gives bulk for dilatation.

5th. Do not hasten the passage of the hips through the pelvis. Secure all the dilatation possible.

6th. Guide the rotation of the child in its descent, so that the abdomen is posterior in relation to the mother.

I have said nothing in regard to the diagnosis in these cases, because the points of diagnosis are so well known, and so easily made out, that a mistake can only occur through great and inexcusable carelessness.

PATHOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY.

Regular Meeting, April 12th, 1877.

The President, Dr. Rockwell, in the chair.

EPIPHYSITIS.

Dr. J. S. Wight presented an interesting specimen of this disease. The patient was a young man of sixteen years, who had been well up to one year ago. He then had acute inflammation about the knee, which was called synovitis of knee-joint. The joint is said to have been opened several times, but this is doubtful. At all events, continued inflammation followed, terminating in suppuration. The limb was amputated for Dr. G. W. Cushing, whose patient he was.

The patient died a few days after the operation.

The specimen consists of lower three-fourths of R. femur, its length being nine inches, three inches being diseased.

The epiphysis is about normal size, and dislocated *inward* and *upward* on the diaphysis.

There is necrosis of part of lower end of shaft; new bone is growing, and partly connecting epiphysis to diaphysis again.

Dr. W. regarded this as a case of epiphysitis. The weight of the attack is upon the vascular structure, which is limited by the epiphyseal cartilage, this being destroyed, and apparently by an acute attack.

Dr. W. had observed cases which tended to show that we may have sometimes chronic epiphysitis, and he thought that some cases of caries in morbus coxæ may be this chronic form.

OBSTRUCTION OF PYLORUS.

Dr. Griffiths presented stomach from woman of fifty-two, who had persistent vomiting, which was temporarily relieved by removing impacted fæces from rectum; but it recurred, and death followed from exhaustion. The pylorus was obstructed by a tumor, which occluded the bile duct by pressure.

Dr. Wight had seen a child of twenty months, with impacted rectum, and complete constipation for ten days.

Dr. Griffiths had seen obstinate constipation, with rectal impaction, from exclusive use of liquid food.

CHRONIC PHTHISIS.

Dr. Westbrook presented specimen from a sailor, 23, a patient admitted to the College Hospital, February 23d, 1877. Had cough, with

laryngitis, and dullness over whole R. lung. Was feeble, and had bronchial respiration, with signs of extensive tubercular infiltration over left lung. Having died of exhaustion, the autopsy showed numerous caverns in R. lung, miliary tubercle in L. apex, and cheesy masses elsewhere, ulcerated larynx, tuberculosis of intestines.

ATHEROMA AND OCCLUSION OF CORONARY ARTERIES.

Dr. Segur showed a heart weighing one pound, from an old man who died suddenly, after sharp epigastric pain, following a full meal.

The only lesions found were occlusion of both coronary arteries, with atheroma. Hypertrophy had been made out.

Dr. S. referred to Trousseau, on Angina Pectoris, and to Lander Brunton's treatment of this neurosis with amyl nitrite.

Dr. S. Pilcher was elected a member.

N. B. SIZER, M.D., *Secretary.*

LATE MEDICO-LEGAL ISSUES IN BROOKLYN.

MEDICO-LEGAL issues have been unusually frequent in our local courts of late, and some points of decided interest have been under judicial consideration. We print below two recent decisions, phonographically reported, for which we are indebted to the honorable judges who heard these causes. The first has no little interest in respect of the non-controlling weight of a "fee-bill" as a matter of evidence, and the sharp line to be drawn between the value or worth of professional services, and the customary charges for such services. Drs. Van Buren, Parker and others from New York city testified in this case. The second will, doubtless, have the effect of diminishing pleas of malpractice as an offset to the payment of a bill for services; it also plainly sets forth the legal view of the obligations of the practitioner of medicine.

CORNELIUS OLCOTT *vs.* JOHN C. JUHRING.

CHARGE TO THE JURY BY CHIEF JUSTICE NEILSON.

Gentlemen of the Jury: There is but one question of fact involved in this case, and that is for you to determine. On referring to the pleadings, I find that the plaintiff alleges his services were worth $1,500. The defendant, by his answer, denies that, and says the services were not worth more than $150. That raises a simple issue—the only one before you. There is not in the pleadings any appeal to a custom which regulates the charges according to the ability to pay, nor any reference to the fee-bill of the Kings County Medical Society. You have been sworn to try this issue, not sworn to try anything else, and to try it on the evidence.

As to the defendant's ability to pay, it is my duty to say to you that you are not to be controlled or governed by that in any degree. You have evidence before you, such evidence as is commonly received, in regard to the defendant's occupation, position and calling, but no question to decide which, at all, depends upon his financial ability. It is true, as stated by the learned counsel for the defendant, that when a physician or surgeon undertakes to perform a service, he thereby professes to have the necessary skill. On the other hand, when a patient applies for treatment, it might well be assumed that he has the ability to pay, and it is rather late to say that he has not, after the service has been rendered. It would have been fair, if the defendant felt that his circumstances demanded it, to call the doctor's attention to his occupation and means, to inquire as to the expenses, to ascertain whether they could not be modified to conform to his ability. It does not appear that that was done.

As to the fee-bill of the Medical Society, it is not controlling at all, although it was evidence which I did not think it proper to exclude. According to some of the testimony, the physicians themselves do not feel bound to conform to it, or to limit their charges thereby. How can you satisfy yourselves that the members of the Society who, at a particular meeting, voted to adopt that fee-bill, had, or that the majority of them had, the actual knowledge or skill derived from experience, which would have enabled them safely to perform this operation, or intelligently to fix its value?

In determining the question of value, you will reconcile the evidence given as far as practicable. It would be well to consider, first, the preparatory service, embracing six visits, at each of which, in addition to prescribing with a view to enabling him the better to bear the operation, explorations were made with the sound, to determine the character and size of the stone, and to gain indications as to the form of operation which it would be best to adopt. Then consider the operation itself, which appears to have been satisfactory, and the subsequent treatment. I have no opinion to express upon it myself, but I commend it to your earnest attention, as worthy of all the care you can give it. You will find such a verdict as you shall, upon this evidence, think is consistent simply with the value of the services.

HERBERT F. WILLIAMS *vs.* JOHN O'REILLY.

Ruling on Motion to Direct a Verdict.

At the close of the defendant's case, plaintiff's counsel asked the Court to direct a verdict for plaintiff, on the ground, among others, that there was no evidence to sustain the defense of malpractice; that, on the contrary, malpractice was positively disproved by the facts, and by the testimony of Dr. Bodkin. After argument upon the motion, his Honor, Judge Reynolds, ruled as follows:

I have no doubt about my duty here upon the testimony. This plaintiff was bound to use a reasonable degree of skill in the discharge of his duty; not the highest degree of skill, because no one professional man can possess the highest degree of skill in all the departments of his profession. There are probably very few who possess the highest degree of skill in any one branch. But the rest are not to be deprived of the privilege of practicing because they are not equal to the most eminent. No such rule applies either to the practice of law or medicine, or to any other form of professional effort. They must have reasonable qualifications for practice, and must use such skill as they have with care, attention and proper application.

I do not conceive that the question which has been raised here, as to the advisability

of calling a consultation before taking a particular step, has anything to do with this case; that is a mere matter of judgment and of courage, the individual determining what he will attempt to do without advice or support. If he has done what was to be done with reasonable skill, that is all that is required of him, and whether he calls in others to consult, or not, does not affect the legal question as to whether he has been wanting in the skill which the law requires. A man, be he ever so young, may undertake the most difficult operation, and one which everybody would suppose prudence would require him not to undertake without a consultation; yet if he does undertake it and performs it with reasonable skill, he has done all that the law requires.

Now, I do not see anything in this case which would authorize a jury to find that Dr. Williams has been guilty of a failure on this occasion to use that reasonable skill which the law requires in his profession. You may take his own testimony, or you may throw it out, but there is not a fact proven that I can call to mind in the case, which goes to show that upon this occasion in the use of these instruments he violated any of the known rules of the profession to which he belongs.

A man is not required to practice according to the peculiar notions of all the schools in his particular profession, because it would be impossible to do so. Some think that instruments should hardly be used at all; that cases in which they should be used are very rare. Others think that they are allowable quite frequently, and that they are very useful assistants to nature on many occasions when nature without their aid would finally succeed in the effort. Where, on a given occasion, the profession would differ as to the propriety of using instruments, a physician is not to be convicted of want of reasonable skill if he has respectable authority in favor of his practice, although it may be contrary to the notions of others equally eminent, and of equally good authority.

On this occasion, there is nothing to show, nothing which would authorize a jury to say, that, when these instruments were used, their use was not advisable. It may have been supposed up to the very instant, or to within a very short period of the time that they were used, that the case was progressing favorably—that everything was right, as he said; and yet the emergency may have arisen and been apparent to the mind of a professional man, instantaneously, as one in which the use of instruments was proper and advisable. The doctor has stated the reasons why he used the instruments, and the professional men who have been examined as experts say that if the case presented itself as he has sworn it did, it would not be bad practice to use the instruments, but rather, advisable to do so. If you throw away that evidence, and say the doctor has not stated it correctly, then where is the testimony to show what state of facts did really exist? And the fact that it is a matter difficult to prove, is not a reason why you should dispense with proof. That is the misfortune of the defendant. No matter how difficult a matter in issue may be to establish, it must be made out by competent proof, and the jury are not allowed to guess at it because it is difficult to prove.

I do not like to take the responsibility of deciding questions of fact, when we have a jury specially for that. But where there is not sufficient evidence to authorize a jury to find except in a given way, it is the duty of the Court to give a direction to the jury; and it is very clear to my mind, as the best conclusion to which I can come on such reflection as I have been able to give to it after hearing the arguments of counsel, that it would be absolutely unjust to permit a jury to find a verdict charging a professional man with malpractice upon such testimony as this, and injure his reputation and standing, without any better grounds for doing so than this case furnishes, as disclosed by the evidence. I think I ought not to submit the question to them. There is a question which, I think, will have to go to the jury—that is, as to the value of his services, and whether there is any contract

which covers any part of them. Any further evidence must be directed to that single issue, as must also the arguments of counsel. The defendant may take exception to these rulings here, or at any stage of the case, so as to preserve his full rights.

A third medico-legal case, that has attracted more general attention than any other, was heard before His Honor Judge Gilbert, about October 16th. The court-room, on this occasion, was well garrisoned by eminent gynecologists from New York and elsewhere, witnesses for the defendants—Drs. Byrne and G. K. Smith—but their services were not employed; for the Judge granted a motion for non-suit after hearing the testimony on behalf of the plaintiff. The decision of this motion, given below from a press report, will afford a valuable precedent in similar persecutions of surgeons.

Judge Gilbert said he had given the matter much consideration, and while on one hand the public had great interest in enforcing a proper discharge of professional duties, on the other hand it was the duty of courts to protect professional men from unfounded charges of malpractice or neglect of professional duty. In this case the charge was that the defendants performed an operation for cancer when it did not exist. That was the only charge in the complaint. There was no allegation that the defendants improperly abandoned the patient, or adopted any improper mode of operation. The question was whether the charge of malpractice, the performing of an operation when there was no occasion for it, was sufficiently made out to go to a jury. His Honor's opinion was that it was not. He would be lacking in his duty, if he submitted to the jury the question whether these defendants were guilty of negligence when there was no proof of it.

Dr. Strew, who had attended plaintiff for years, and knew her constitutional traits, said that she did not suffer from cancer; but further on in his testimony he said that no man could determine with certainty whether a patient had manifested symptoms of cancer until the patient died.

His Honor did not think he ought to give much weight to Dr. Strew's testimony, when it was opposed by the testimony of all the other medical witnesses whom plaintiff placed on the stand. It would involve great injustice to professional men if they were bound on every occasion when they removed a tumor to prove that it was a cancerous one. The only question in his Honor's mind was as to whether, in view of the fact that plaintiff could furnish no witnesses to prove that it was not a cancer, these defendants might not be put on the stand, that the nature of the tumor might be proved by them. It would be an unfair rule, however, when respectable and competent physicians were concerned, to indulge a presumption of negligence as on this particular occasion. The motion for non-suit must be granted.

Resolved, That the President be directed to appoint a member to codify the By-Laws of this Society from 1869, the date of this last publication of the same, to and including the present session, with authority to print 1,000 copies, which was adopted.

The PRESIDENT appointed Dr. A. Hutchins, of Kings, as committee to codify the By-Laws.—(*Extract from the Transactions of the Medical Society of the State of New York, 1877.*)

BY-LAWS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

ADOPTED SINCE FEBRUARY 2, 1869.

[Substitute in Chap. I, §3.]

VACANT.	VACANT.	VACANT.	VACANT.
Feb. 1, 1881.	Feb. 1, 1882.	Feb. 1, 1879.	Feb. 1, 1880.

[To be added after the word "elected," in Chap. I, §3.]

The credentials of all delegates applying for admission to this Society must be sealed with the seal of the county society or incorporated medical school they represent, and be certified to by the Secretary of such county society or medical school.

Transactions 1870, page 15.

[Substitute for Chap. I, §5, and Chap. VI, §3.]

a. The Society may annually elect from those who have served as delegates, and have been nominated and declared eligible at a previous Annual Meeting, permanent members from each of the Senatorial districts established in 1836; but no one shall be, or shall be declared to be, "eligible for election as permanent member," who shall not have attended three Annual Meetings of this Society as a delegate, which meetings shall not be restricted to any one term of service of the delegate.

b. The Committee of Nominations shall be required to select for presentation to the Society for permanent membership only the names of those previously made eligible, who shall have manifested an interest in the Society by a continued attendance upon its meetings after the expiration of their term of service as delegates.

c. Hereafter, permanent members may be elected annually from each of the eight (8) Senatorial districts of 1836, in the proportion of one permanent member to every eight delegates from the county societies to which the district may be entitled, and one for every additional fraction of one-half or more of this number. At the time of their election, permanent members shall be residents of the districts which are credited with them, and shall be in good standing as active members of their county societies.

d. Each permanent member on his election shall pay an initiation fee of five dollars, and thereafter an annual assessment of two dollars. The names of permanent members shall not be enrolled until the initiation fees shall have been paid. A permanent member shall not be permitted to register until his annual dues shall have been paid.

e. Each permanent member who shall have paid his annual dues shall have a copy of the Transactions for the year, for which he shall have paid, sent to him by the Committee of Publication.

f. Candidates elected to permanent membership, who neglect to pay the fee required by the By-law for one year from the date of their election, shall forfeit their rights as permanent members.

g. Any permanent member who shall fail to pay to the Treasurer his annual dues for three successive years, shall forfeit his permanent membership, and his name shall be dropped from the rolls of the Society. In this case, the permanent membership can be restored by subsequent payment of all arrearages to date.

h. Any permanent member who shall be reported by the medical society of his county as being no longer in good professional standing, or in active fellowship therewith, shall lose his permanent membership, and his name shall be dropped by the Secretary.

i. Permanent members, who may remove from this State, shall be regarded as non-resident permanent members, having all the rights and privileges of honorary members.

Transactions 1870, p. 60.
" *1871, p. 39.*
" *1873, pp. 35 and 68.*
" *1874, p. 29.*
" *1876, pp. 48 and 49, 69 and 70.*
" *1877.*

[To be added to Chap. I, §6.]

No physician of this State can be received by this Society as an invited guest unless he is either a member of a county medical society, or a member of the New York Academy of Medicine, or a member of the faculty of a medical college.

Transactions 1868, page 53.

[To be added to Chap. I, §8.]

Papers presented by honorary members take the same course that they would if emanating from a delegate or permanent member.

Transactions 1873, page 12.

[To be added to Chap. I, §10.]

The Society may, from time to time, change the day of holding its Annual Meeting, in accordance with the provisions of Chapter V, Laws of 1876, being an "Act to enable 'The Medical Society of the State of New York' to alter the time of holding its Annual Meeting."

[To be added to Chap. II, §4.]

The Secretary shall provide 300 extra copies of the Proceedings of each Annual Meeting, printed in a separate form, and ready for distribution at the next succeeding Annual Meeting, for the use of the members present.

Transactions 1871, page 67.

[To be added to Chap. II, §6.]

He shall be a trustee of the Merrit H. Cash Prize Fund.

Transactions 1876, page 22.

[To follow Chap. II, §7.]

The Censors of this Society for the several districts are constituted Boards of Censors, in addition to the Censors of the county medical societies, for examining and certifying the qualifications of such young men as propose to commence the study of medicine.

Transactions 1872, page 55.

[To be added to Chap. III, §2.]

It shall also be their duty to transcribe from the register of this Society the names of delegates and permanent members from county Societies, which may, from time to time, during the sessions of this Society, be entered therein as fast as such names shall be registered. The list thus made up shall be for the use of the Secretary in calling the ayes and noes, or in taking any other vote which the Society may direct.

Transactions 1871, p. 19.

[To follow Chap. III, §5.]

The Society shall annually elect a *Committee on Hygiene,* consisting of seven members, to place itself in immediate correspondence with the county societies, to report upon and present such subjects as may seem to the Committee of special importance for the administration of hygiene, and also to consider such subjects as may be referred to it by this Society.

Transactions 1869, p. 31.
" *1873, p. 51 and 63.*

[Substitute for Chap. III, §6, and for Chap. VI, §2.]

§6. *a.* The Society shall annually elect a *Committee of Publication* consisting of four members, including the Secretary and Treasurer, whose

duty it shall be to superintend the publication of the Transactions of the Society, and such papers as they may select from those presented at the meeting.

The author of any paper read before this Society may have the privilege of publishing the same in any legitimate medical publication, unless objected to by a vote of the Society, and any paper presented to the Society by title may be published by the author, unless objected to by the Committee of Publication.

Unless specially ordered by the Society, no paper shall be published in the Transactions which has not been written by a member of the Society; but papers transmitted from county medical societies to this Society, and referred to Committee of Publication, may, though not written by members of this Society, be published in the Transactions, if the Committe judge them worthy of publication.

b. The Committee of Publication, in preparing the annual report of the Transactions of this Society for publication, shall arrange and present the same in the following order:

1. The organization of the Society, the President's Inaugural Address, and a list of members present.

2. A clear and general abstract of the proceedings.

3. The President's Annual Address, and all such papers presented to the Society as the Committee of Publication shall deem worthy of a place in our Transactions.

4. Lists of the members of the various county medical societies shall be published annually in the volume of the Transactions.

5. No portraits shall be introduced into the Transactions without a vote of the Society.

c. The Society shall publish its own Transactions, and the expense of the same shall be met by a system of assessments on permanent members and county societies.

1. The Committee on Publication shall hold the copyright in the name of the Society, and shall invite the competition of at least two (2) respectable publishing houses for its publication, and award the work to that house which will perform the work in the most economical way.

2. The style of the volume shall be similar in size, paper, printing and binding to that of 1875.

3. The expenses of its publication shall be defrayed by contributions, when called for from the Committee on Publication, from county medical societies, in proportion to their membership, and they shall receive in return a number of copies, in proportion to the amount contributed.

4. A copy of the Transactions shall be sent by the Secretary, without charge, to each delegate from other States and Societies who may be present at the meeting for which the Transactions are issued, and also to each medical library in the State, and the National Medical Library, and to any other public or incorporated library known to have a medical department.

5. The Committee on Publication are authorized to send presentation copies of the Transactions to the medical journals, domestic or foreign, and to such individuals as may be interested in the contents of the volume, as may, in their judgment, be for the interests of the Society.

6. Papers which are not placed by their authors complete in the hands of the Committee on Publication within thirty days after the close of the session, shall be excluded from the volume.

Transactions 1871, p. 47.
" *1874, p. 29.*
" *1875, p. 31 and 39 and 49, et al.*
" *1876, p. 34 to 40 and 71.*

[Substitute for Chap. III, §2.]

At the Annual Meeting, immediately after the adjournment of the first session, the delegates and permanent members present from each Senatorial district of 1836 shall be constituted a Committee, who shall elect one person, who shall be a member of the Nominating Committee, and the eight persons thus elected shall constitute a Committee of Nomination. Each person selected as a member of the Nominating Committee shall be a member from the Senatorial district which he represents.

Transactions 1877.

[To be added to Chap. V.]

As the old laws, requiring every physician in good standing to become a member of his county medical society, have not been repealed, it is, as it always has been, the duty of every such physician to obey the law; and as the penalty for non-compliance has been removed by law, it becomes a point of honor for every regular physician to do so. The Presidents and officers of every county society in the State of New York are requested to use their best efforts to have these laws complied with.

Transactions 1872, page 57.

[To be added to Chap. V.]

Each county society should have a Standing Committee on Hygiene, to gather the facts in their respective localities bearing upon this subject, and after discussing them in their own societies, forward them, with such

opinions and deductions as they may form, to the State Society, as material for the use of the Committee on Hygiene.

Transactions 1873, p. 51.

[To be added to Chap. V.]

Each county society in this State is requested to appoint a Committee of Registration, whose duty shall be to prepare and preserve a complete list of its past and present members, with their post-office addresses, and forward annually, on or before the first of March of each year, with the names of the officers of said county society, to the editor of the *Medical Register*, for publication in the aforesaid *Register*.

Transactions 1870, p. 52.
Transactions 1871, p. 67.

[To be added to Chap. V.]

The county medical societies, which constitute this Society, shall direct their several Boards of Censors to examine and determine the educational qualifications of such young men as propose to commence the study of medicine, and to certify to the fitness of all such as may be found to be qualified. No member of any medical organization represented in this Society shall be permitted to receive a student into his office until such student presents a certificate of a Board of Censors, showing his qualifications to enter upon the study of medicine. Any county medical society failing to comply with this By-law shall be subject to the discipline of this Society.

Transactions 1872, pp. 54 and 55.

[To be added to Chap. V.]

To enlarge their usefulness, the county societies should hold their meetings as often as every quarter, and, whenever practicable, every month. Annual meetings, for the election of officers and delegates, should be held at county seats, and the other meetings at such places in the county as each Society shall think most advantageous. Special efforts should be made to enroll as members of county societies the names of all persons duly authorized to practice our profession who conform to the Code of Ethics of this Society and that of the American Medical Association.

Transactions 1869, p. 29.

[To be added to Chap. VI.]

In case of the death of any member of this Society, it shall be the duty of the nearest Censor, in the district in which he resided, to transmit to the Secretary a professional obituary of suitable length, for publication in the Transactions of the Society.

It shall be the duty of the Secretary to cause to be published in the

yearly Transactions of this Society a list of living members thereof, with the above By-law appended thereto; and at each meeting to call the roll of the members, and if any are reported as having died during the year, the presiding officer shall appoint some member to perform the above duty.

Transactions 1849, page 93.

[To be added to Chap. VI.]

The Code of Ethics, to which the Society and the various county societies acknowledge allegiance, providing appropriate and sufficient means for obtaining redress in all matters of difference between physicians, any physician preferring charges, or against whom charges may have been preferred, who shall resort to courts of law, or any legal process, shall be considered unworthy of membership in medical societies, and, if a member, shall be declared expelled by the President at a stated meeting of the Society to which he may belong.

Transactions 1872, page 63.

LAWS OF THE STATE OF NEW YORK RELATIVE TO THE MEDICAL PROFESSION.

NOT PUBLISHED IN THE TRANSACTIONS OF 1869, OR SINCE ENACTED.

An Act to amend an Act entitled "An Act to Incorporate the New York Academy of Medicine," passed June 23d, 1851.

Passed June 4th, 1855.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

§1. The fifth section of chapter two hundred and seventy-four of the Laws of 1851 is hereby amended so as to read as follows:

§2. The corporators hereby incorporated are authorized to appoint five delegates to represent them in the State Medical Society, with all the powers and privileges which delegates from the respective medical colleges of this State possess.

§3. This Act shall take effect immediately.

An Act to amend an Act entitled "An Act to Incorporate Medical Societies, for the Purpose of Regulating the Practice of Physic and Surgery in this State," passed April 10th, 1813.

Passed June 4th, 1853.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

§1. Section third of said Act is hereby amended as follows: instead of the words "said Society shall be composed of one member from each of the county societies in the State," it shall read, said Society shall be composed of as many members from each county medical society as there are members of this Assembly from each county.

§2. This Act shall take effect immediately.

Laws of 1872, Chapter 746.

An Act relating to the Examination of Candidates for the degree of Doctor of Medicine.

Passed May 16th, 1872.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The Regents of the University of the State of New York shall appoint one or more boards of examiners in medicine, each board to consist of not less than seven members, who shall have been licensed to practice physic and surgery in this State.

Section 2. Such examiners shall faithfully examine all candidates referred to them for that purpose by the Chancellor of said University, and furnish him a detailed report in writing of all the questions and answers of each examination, together with a separate written opinion of each examiner as to the requirements and merits of the candidates in each case.

Section 3. Such examinations shall be in anatomy, physiology, materia medica, pathology, histology, clinical medicine, chemistry, surgery, midwifery and in therapeutics, according to each of the systems of practice represented by the several medical societies of this State.

Section 4. The said reports of examinations, and the annexed opinions of the examiners, shall forever be a part of the public records of the said University, and the orders of the Chancellor addressed to the examiners, together with the action of the Regents, in each case shall accompany the same.

Section 5. Any person over twenty-one years of age, of good moral character and paying not less than thirty-five dollars into the treasury of the University, and on applying to the Chancellor for the aforesaid examination, shall receive an order to that effect, addressed to one of the boards of examiners, provided he shall adduce proofs satisfactory to the Chancellor, that he or she has a competent knowledge of all the branches of learning taught in the common schools of this State, and of the Latin language, and that he has diligently studied medicine not less than three years, under the direction of one or more physicians duly qualified to practice medicine, or has himself been licensed, on examination, by some medical society or college legally empowered to issue licenses or degrees in medicine.

Section 6. The Regents of the University, on receiving the aforesaid reports of the examiners, and on finding that not less than five members of a board have voted in favor of a candidate, shall issue to him or her a diploma conferring the degree of doctor of medicine of the University of the State of New York, which degree shall be a license to practice physic and surgery.

Section 7. The candidate, on receiving said diploma, shall pay to the University the further sum of not less than ten dollars.

Section 8. The moneys paid to the University, as aforesaid, shall be appropriated by the Regents for the expenses of executing the provisions of this Act.

Section 9. The Regents may establish such rules and regulations, from time to time, as they may deem necessary to insure the faithful execution of the provisions of this Act.

Section 10. This Act shall take effect immediately.

Laws of 1874, Chapter 436.

An Act to Regulate the Practice of Medicine and Surgery in the State of New York.

Passed May 11th, 1874.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Every practitioner of medicine or surgery in this State, excepting licentiates or graduates of some medical society or chartered school, shall be required, and they are hereby commanded, to obtain a certificate from the censors of some one of the several medical societies of this State, either from the county, district or State Society; which certificate shall set forth that said censors have found the person to whom it was issued qualified to practice all of the branches of the medical art mentioned in it. And such certificate must be recorded in a book provided and kept for the purpose by the County Clerk of each county in the State.

Section 2. The censors of each medical society aforesaid, shall notify all practitioners of medicine and surgery of the terms and requirements of this Act, and shall request such persons, so notified, to comply with those requirements within thirty days after such notification; and if such persons shall not, within the time specified in the notice, or within such further time as may be allowed by special arrangement with said censors, not exceeding ninety days, comply with the requirements herein made of physicians or surgeons, as the case may be, such persons shall thereafter be subject to all the provisions and penalties prescribed by this Act for any violation of the same; and the President of the society making such request shall, and he is hereby required, to at once commence the proceedings authorized by this Act against such person.

Section 3. It is hereby declared a misdemeanor for any person to practice medicine or surgery in this State, unless authorized so to do by a license or diploma from some chartered school, State board of medical examiners, or medical society, or who shall practice under cover of a medical diploma illegally obtained; and any person found guilty of such a misdemeanor, shall for the first offense be fined not less than fifty nor more than two hundred dollars. For any subsequent offense, not less than one hundred nor more than five hundred dollars, or by imprisonment not less than thirty days, or by both imprisonment and fine; and all such fines shall go into the county treasury of the county bringing such action.

Laws of 1876, Chapter V.

An Act to enable "The Medical Society of the State of New York" to alter the time of holding its Annual Meeting.

Passed February 1st, 1876.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. The Medical Society of the State of New York may, from time to time, change the day of holding its annual meeting to such other day in the year as may be more convenient, by a two-thirds vote of all the members present at any anniversary or annual meeting of said Society, provided that no such change shall be made unless notice of the intention to change the time of such annual meeting shall have been first given at a previous regular annual meeting. An entry in the minutes of said Society of notice of such intention to change the time of the annual meeting, and an entry in such minutes of the vote taken upon any motion made pursuant to any such notice, shall be *prima facie* evidence of such notice, motion and the vote had thereon respectively.

Section 2. This Act shall take effect immediately.

Kings County Pharmaceutical Society.

OFFICERS:

GEORGE C. CLOSE.....*President.*
G. M. BAKER.....*First Vice-President.*
CYRUS PYLE.....*Second Vice-President.*
L. D. SHEETS.....*Third Vice-President.*
LOUIS E. NICOT.....*Secretary.*
R. J. OWENS.....*Treasurer.*
GEORGE A. NEWMAN, GEORGE H. NORFALK, HOWARD M. GROSS.....*Censors.*
L. T. PERKINS, S. CHICHESTER, THOMAS JONES, E. THEALL, JR, B. V. B. LIVINGSTON.....*Elective Trustees.*

TRANSACTIONS.

REGULAR MEETING—DEC. 18, 1877.

President GEORGE C. CLOSE in the chair, and about thirty-five members present.

Mr. ROBERT R. WHITING was proposed for membership, and, after a favorable report from the Committee of Investigation, Messrs. F. C. COVELY and JOHN W. KIMBALL were elected members.

The special committee upon the subject of Early Closing reported progress.

Dr. ALEXANDER HUTCHINS, President of the "Medical Society of the County of Kings," who was present by invitation, in reference to the proposed publication of the transactions of the Society in "THE PROCEEDINGS," being called upon, made a few remarks concerning the benefits to be derived by both Societies should their publication be continued. He also stated that he was prepared to answer any questions the members might put in regard to this subject.

Dr. H. G. LILLIENSCHIOLD thought the *Druggists' Circular* was the proper journal wherein to publish our proceedings. Dr. G. M. BAKER, dissenting from this view, thought that we should, by no means, fail to embrace the opportunity now presented to us; it was immensely more desirable to have them published in a journal which we would partially

control, thereby insuring a correct account of our transactions, than to leave the matter entirely in the hands of parties who, although their intentions were the best, were not at all responsible to us for their correctness.

Dr. E. R. Squibb thought the matter had better be referred, and moved that a committee of three be appointed to take entire charge of the subject, thoroughly investigate it, and report at the next regular meeting of this Society. The motion prevailed, and the President appointed Messrs. William Wynn, Louis E. Nicot and Henry J. Menninger.

* * * * * *

COD LIVER OIL.

Mr. Edward A. Sayre presented a very fine specimen of American Cod Liver Oil, manufactured by William Stone, of Swampscott, Mass.

Dr. Squibb said that the purity of cod liver oil was a very important subject, on account of its very general use, and because the stomachs of those persons who needed the oil most were least able to retain it. He greatly preferred the Norwegian oil, not because it contained any medicinal property which ours did not, but because of its greater purity, on account of the manner of its manufacture. In Norway, the cod fishery ceases, by law, about the middle of April, and is not resumed until late in the fall. Great care is observed in the preparation of the oil, scarcely any heat being used, the absence of any high temperature preventing incipient rancidification. Only the very finest of that produced is exported, and for these reasons the Norwegian oil is almost invariably finer than our own.

The discovery of the fact that Ether increased the flow of pancreatic fluid, which emulsifies, and thereby assists in the assimilation of fatty food, suggested to some practitioners its use with cod liver oil, and it was found that the addition of ten drops of ether to two drachms of the oil had met with very satisfactory results. Oil has usually been given in too large doses, and one drachm three or four times a day is now thought to be sufficient in a majority of cases.

Dr. Squibb further stated that he did not think that pharmacists were overstepping the bounds of propriety by giving to the patients such directions regarding the administration of nauseous medicines as might make them more acceptable. He had found that cod liver oil given in a five per cent. solution of gum arabic, previously poured in a small medicine glass, tended greatly toward covering the taste. Froth from porter was also an excellent vehicle, or some salt herring, eaten just before taking the oil, would make its taste imperceptible.

Mr. Lillienschiold said he had found that a little table salt sprinkled upon a spoonful of the oil would destroy its offensive taste, as well as assist in its digestion.

Several members gave their experience in making emulsions of cod liver oil.

Mr. Menninger stated that he had frequently prepared an emulsion which contained fifty per cent. of cod liver oil and twelve and a half per cent. of gum arabic, but had not met with very flattering results.

Mr. Close prepared an emulsion with *glyconine*, which had proven uniformly successful.

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HYDROBROMIC ACID.

Discussion was invited upon this subject, the acid not being an officinal preparation, and, as yet, no standard of its strength having been established.

Dr. Squibb explained that Fothergill's directions for its preparation was the pouring together of solutions, of a given strength, of bromide of potassium and tartaric acid; the precipitation of bitartrate of potassium would follow the hydrobromic acid, remaining in solution together with more or less bitartrate of potassa, which, however, could be removed by means of alcohol.

Dr. Squibb further stated that Fothergill's solution contained ten per cent. of the acid, while Merck's contained eighty per cent. He thought it would be desirable to have the solution of such strength that one minim would represent one grain of bromide of potassium. This, however, would require a sixty-eight (68) per cent. solution, which would be too caustic to be desirable. He therefore advised the adoption of half that strength; that is, one of thirty-four per cent., two minims of which would be equivalent to one grain of the bromide.

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PROPYLAMIN.

Dr. Baker said he had noticed that a small bottle of propylamin, which had had the usual herring brine odor when first opened, had, after some weeks, acquired a strong ammoniacal smell. He had subsequently noticed the same ammoniacal odor in a newly-opened bottle. He asked whether this indicated worthlessness, or only partial decomposition.

Dr. Squibb agreed with the latter conclusion, and remarked that very slight decomposition would be sufficient to cause the odor of ammonia to drown the natural smell of propylamin, the properties of which were not necessarily greatly impaired.

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IRON PILL MORTAR.

Dr. Menninger exhibited a pill mortar made of cast steel, which was being introduced by the Neidlinger Brothers. Its many advantages over the wedgewood mortar were discussed, and although it was found to possess some negative qualities, it seemed to meet with much favor from all present.

The meeting thereafter adjourned to the third Tuesday in January, 1878.

Louis E. Nicot, *Secretary.*

A CASE OF CÆSAREAN SECTION.

BY C. JEWETT, M.D.

Mrs. L., aged 23 years, in the eighth month of utero-gestation, primipara, was seized, Dec. 6th, with diphtheria. I first saw her at 7½ P. M., on the 8th, with Dr. Duryee, her physician. She was sitting up in bed and showed no evidence of exhaustion. Temperature, 103¼, pulse, 120.

About one-third the anterior surface of the soft palate was covered with a fibrinous exudation. The patient was aphonic, but had no dyspnœa at that time or subsequently. The treatment, which was stimulant and tonic, was continued, and a hopeful prognosis given. Two hours later the patient suddenly became much worse and died. The immediate cause of death is still obscure.

Reaching the bedside at the moment of death, I proposed Cæsarean section to save the child. Obtaining consent of the friends, the first incision was made at about five minutes from the time the mother ceased to breathe. Cutting rapidly down through the abdominal and uterine parietes, the placenta was exposed, attached anteriorly. In less than six minutes after the mother's death the child was removed from the uterus, but in a state of apnœa. Breathing was not fully established till artificial respiration (by Silvester's method) had been maintained for at least a half hour. The child lived till the seventh day, when it succumbed to atelectasis of the lungs. In every other respect it seemed perfectly healthy. Had mouth-to-mouth inflation of the lungs been substituted for Silvester's method, possibly the child might have survived. The former mode of inflation I have frequently practiced through the intervention of a coarse towel, passage of the air into the stomach being prevented either by pressure upon the epigastrium, or by gently forcing the larynx back against the œsophagus.

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυναων.

Hymns of Homer, No. XVI.

ITEMS.

——Our Library has recently been materially increased by donations from a variety of sources. Among those who have therein deposited volumes of value, are Hon. J. B. Chittenden, Surgeon-General Woodworth, Surgeon T. L. Smith, U. S. N., Drs. Hawley, Bartlett, Hutchins, Hutchison, H. B. White, Thayer, Hunt, and L. D. Mason; also the Smithsonian Institution. . . . . The medical publications of our polite friends, Messrs. D. Appleton & Company, will be passed over to the Library after review by this journal. . . . . Members having duplicate, or relatively unserviceable, copies of books, may bestow them upon the Library; also, those who have published books, etc., would do well to send in "presentation" copies; at the coming annual meeting the attendance will be large, and *every* member who comes may, if he pleases, bring a volume as a New Year's gift.

——Dr. G. A. Evans has been using ether internally for the relief of cough, expectoration, anorexia, and painful respiration in phthisis pulmonalis, with decided success. He suggests its use to the profession for the relief of the above symptoms, and requests them to notify him of their success or failure. He prefers spts. ether comp., and thinks it is less likely to provoke nausea. It is to be given in twenty minim doses, every hour, until relieved.

——"How we Raised Our Baby" has a local interest, from its authorship being credited to a member of this Society. It was presented as a serial story to the readers of the *Chimney Corner*, and now appears in attractive book form from the press of Derby Brothers. Just such a story could only have been written by a medical man, and medical men will not be slow to recognize the tribulations *Our Baby* was witness to. The book is hardly suitable for a bridal present, and yet, as the author of *Helen's Babies* suggests in the introduction, the perusal of this volume would disillusionize many young couples contemplating or entering upon the marriage state. But the author's purpose is widely different, and the troop of miseries that are ushered into many homes when the baby comes, would have the door slammed in their face, if the mistakes the author points out could be avoided, and the good advice he gives be followed from the start.

——Arsenical Poisoning has been treated successfully by the use of dialysed iron, by Dr. T. B. Reed, of Philadelphia. A lady fond of gum-drops ate them for about an hour, taking them from a pocket in which was a package of arsenious acid, that had been bought as a poison for rats. The wrapper having become broken, the arsenic was very completely dusted over all the gum-drops, and a good dose of the poison was ingested. Symptoms of poisoning came on, and the physician was summoned. The relief afforded by the dialysed iron was immediate.—*Philadelphia Medical Times*, December 8th.

——Chloroform during Labor.—Sir James Paget, in one of his clinical lectures, applied the term "stammering of the uterus" to a non-progressive kind of labor, in which the os refuses to dilate, and the uterine contractions become jerky and very painful, but apparently inoperative. The November *Obstetrical Journal* contains an article on the treatment of this vexatious condition by chloroform; one case is recorded in which a tedious labor was successfully concluded in less than an hour. . . . The writer hints that chloroform diminishes the probabilities of life in the child.

——Difficult Diagnosis.—In the discussion following Dr. J. E. Clark's paper on "Breech Presentations," Dr. H. B. White narrated the following: While I was yet young in the profession, I was called to a difficult case of labor—even the presentation was in doubt; so an older practitioner was called in consultation. After a long examination of the case, this physician shook his head, looked very wise, and declared, "You have a bad case here, Doctor—a *bad* case." "Yes, but what *is* it?" "You have either a breech presentation or—twins." This shows that the diagnosis of a breech is not so easy as is generally claimed.

——Salicylic Acid is administered by M. Gueneau de Mussey in a syrup of gum, by the aid of ten parts of brandy, adding a little lemon-juice.—*British Medical Journal.*

——Queens County has recently established an asylum for its insane poor. Dr. Wood, of Jamaica, is to be the Medical Superintendent.

——Digitalis.—This drug has been called "the quinine of the heart," and has been used with less discrimination than is desirable. M. Gubler, of Paris, has studied its use clinically, and concludes that it is, comparatively, of far more value in mitral affections than in those of the aortic valve; it is contra-indicated in almost all cases of aortic insufficiency and obstruction. Opium is useful in the latter.

——The Adulterations of Sugar.—The inferior refined sugars are transformed into A No. 1 granulated white sugar by the addition of ultramarine, and of the sulphate of tin, alum, etc. The refiners call this "adding the *complementary* color," which is the reverse of complimentary to the consumer. A pure sugar can be had "by purchasing from first-class manufacturers, and paying a slight advance on the price of ordinary granulated white sugar."—E. W. Runyon, *Druggists' Circular*, Dec.

——Druggists' Trials.—The *Chemist and Druggist* gives a long list of names of drugs as they are mutilated by *hoi polloi*. Take a few of the best: Borghs (borax), valentine (volatile) liniament, shoemaker (Jamaica) ginger, acclic (oxalic) acid, cured lime (chlorinated), sulphur and brimstone mixed (sublimed sulphur), flannel seed (fennel), Burr's plaster (porous), sweet cider (spt. nitre), double settlement (corrosive sublimate), and broom-rag for probang.

——Ophthalmic.—Dr. A. W. Calhoun reports a case of successful transplantation of the conjunctiva of a rabbit to the eye of a young lady, for the relief of a deformity.—*Trans. Med. Ass'n, Georgia, 1877.*

——Fracture of the Femur.—Dr. F. H. Hamilton's lecture on this subject is reported in the *Hospital Gazette*, Nov. 15. He sketches the history of modern plans of treatment, but gives the first place to the extension method, usually called "Buck's extension apparatus," but which Dr. H. prefers to call the American plan. The reasons for this choice are given. . . . Dr. H. closes this lecture by disputing the conclusions of Dr. J. S. Wight, of this city, in regard to the inequalities in length between the two legs in the same person, and that shortening may be apparent rather than real.

——The Obstetric Mortality at Vienna has been reduced to one death in 400 deliveries. The medical students have been compelled to wash their hands—in carbolized water. . . . . The good result was immediate.

——The Immediate Cure of Drunkenness.—Dr. Z. Collins McElroy, in the Cincinnati *Lancet and Observer*, July, narrates the case of a drunkard who was completely cured of his appetite for drink by a line of treatment continued just one week. The treatment included the use of whisky, calomel, ipecac, chloral and iron. The author concludes his paper with the assertion that "medicine offers the confirmed inebriate relief from the trammels of appetite with as much certainty as from any other pathological condition." The entire paper, a long one, should be read by those especially interested in this subject.

——THE REGULAR MONTHLY MEETINGS of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

By order of the Society, the January meeting will be held on the 15th, BY QUORUM, to adjourn to the 21st, at which time the following business will be considered:

Reason *versus* Tradition in the treatment of certain injuries to the Wrist Joint, by L. S. Pilcher, M.D. Second paper.

Election of Officers for 1878.

Report of Council.

Report of Treasurer.

Report of Librarian.

Report of Standing Committees.

Report of Delegates to the State Society.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OFFICERS AND COMMITTEES FOR 1877.

President.....ALEX. HUTCHINS, M. D., 796 DeKalb Av.
Vice-President.....C. JEWETT, M. D., 310 Gates Av.
Secretary.....R. M. WYCKOFF, M. D., 532 Clinton Av.
Assistant Secretary.....N. B. SIZER, M. D., 336 Greene Av.
Treasurer.....G. G. HOPKINS, M. D., 375 Grand Av.
Librarian.....W. W. REESE, M. D., 193 Joralemon St.

CENSORS.

J. D. Rushmore, M. D., (Senior Censor), G. W. Baker, M. D., R. M. Buell, M. D., J. H. H. Burge, M. D., F. W. Rockwell, M. D.

DELEGATES TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.
(1874 to 1878.)

Drs. J. Byrne, B. A. Segur, S. G. Armor, Drs. R. M. Wyckoff, W. H. Thayer, J. L. Zabriskie, Drs. A. J. C. Skene, C. H. Giberson, A. Mathewson.

COMMITTEES OF THE SOCIETY.

HYGIENE.

Drs. A. N. Bell, T. P. Corbally, J. Walker, W. E. Griffiths, F. H. Stuart.

REGISTRATION.

Drs. C. H. Giberson, W. E. Griffiths, J. A. Jenkins, Drs. W. G. Russell, N. Matson, F. W. Rockwell, Drs. R. M. Buell, R. W. Wyckoff,

PUBLIC INSTRUCTION.

Drs. A. J. C. Skene, C. L. Mitchell, E. R. Squibb, J. T. Conkling, J. C. Hutchison.

PHYSICIANS' MUTUAL AID ASSOCIATION.

Drs. B. A. Segur, W. W. Reese, J. H. H. Burge, A. Hutchins, W. G. Russell.

Medical Society of the County of Kings.

57th ANNUAL MEETING, JAN. [15th and] 21st, 1878.*

LIST OF NOMINATIONS FOR OFFICERS AND DELEGATES.

By-Laws, Chap. 1, Art. 5.—Nominations for Officers and Delegates shall be made at the December meeting. The Secretary shall have the names of all nominees printed on slips of paper, two of which shall be sent to each active member.

☞ In voting, use the slip as a BALLOT, after having drawn a line through the names of those nominees for whom you do not wish to vote.

For President.

Dr. A. HUTCHINS.

For Vice-President.

Dr. W. H. DUDLEY. Dr. C. JEWETT.

For Secretary.

Dr. WYCKOFF.

For Assistant Secretary.

Dr. EVANS. Dr. SIZER.

For Treasurer.

Dr. HOPKINS.

For Librarian.

Dr. REESE. Dr. THAYER.

For Censors [five in number].

Dr. BAKER,	Dr. CORBIN,	Dr. C. JEWETT,	Dr. PROUT,
" BUELL,	" W. GILFILLAN,	" C. C. JEWETT,	" ROCKWELL,
" BURGE,	" FOWLER,	" PILCHER,	" RUSHMORE,

Dr. A. MATHEWSON, Dr. J. S. WIGHT, Dr. H. B. WHITE.

For Delegates to the N. Y. State Medical Society [nine in number].

Dr. ARMOR,	Dr. GIBERSON,	Dr. A. MATHEWSON,	Dr. SEGUR,
" BYRNE,	" HESSE,	" PILCHER,	" SKENE,
" CHAPMAN,	" HOPKINS,	" PROUT,	" SHERWELL,
" COREY,	" C. JEWETT,	" ROCKWELL,	" STUART,
" FRENCH,	" MARTIN,	" RUSHMORE,	" THAYER,

Dr. WESTBROOK, Dr. WYCKOFF.

The President requests the following members to act as TELLERS:

Dr. COLTON,	Dr. HUNT,	Dr. MARTIN,
" GRIFFITHS,	" EMERY,	" RUSSELL.

Two Amendments to the By-Laws have been proposed: *Chap. I, Art. 3.* To change the time of meeting from the *third* to the *second* Tuesday of each month.

Chap. XI, Art. 2. To add, as a new article, "Any Member Elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

* The Society, at the December meeting, on motion, ordered that the Annual Meeting be held on Jan. 15th, the regular meeting night, by QUORUM ONLY, and adjourn to Jan. 21st for the election of officers and other business. The reason for this action is to be found in the simultaneous meeting of the State Society and this Society.

PROCEEDINGS

OF THE

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

STATED MEETING, JANUARY 21, 1878.

INEQUALITIES IN THE LENGTHS OF THE LOWER LIMBS BEFORE AND AFTER FRACTURE OF THE FEMUR.

BY J. S. WIGHT, M.D.

In the *Hospital Gazette and Archives of Clinical Surgery* of November 15th, 1877, appeared the following paragraph, viz.:

"Dr. Jarvis S. Wight, of Brooklyn, in a paper published in the *Archives of Clinical Surgery*, by a number of measurements made on healthy individuals, attempts to prove that nearly every person has naturally a shorter limb on one side than on the other, and that often, after fracture, we find apparent shortening where there is, in reality, none whatever, the fracture having taken place in the already short limb. This cannot be so, for in nine out of every ten cases of fracture of the femur we do get actual shortening; and how would this happen so constantly if the fracture had occurred in the longer limb?"

These are the closing words of a clinical lecture on "Fracture of the Femur," delivered in the amphitheatre of Bellevue Hospital, New York, by Frank H. Hamilton, M.D., on the day he resumed his professional duties in the wards of said hospital. In the interests of science and surgical progress, I deem it my duty to reply to the words of the learned and distinguished gentleman.

The paper to which Dr. Hamilton refers was an autograph report of a lecture on "Shortening of the Lower Limb after Fracture of the

Femur," delivered by myself in the amphitheatre of the Long Island College Hospital to the class of medical students and a number of my professional brethren. The report was published in No. 8 of the *Archives of Clinical Surgery*, February, 1877, and contained the comparative measurements of the normal lower limbs of sixty males. From these measurements were drawn the following conclusions:

1. The lower limbs of the same person are not always of the same length.

2. The greater number of the lower limbs, comparing the limbs of the same person, show a difference in length.

3. The left lower limb is oftener longer than the right lower limb.

4. About one person out of every five has lower limbs that measure the same length.

5. The difference in length of normal lower limbs of the same person varies in different cases—from one-eighth of an inch to one inch.

6. The measurements of the lower limbs of cadavers and skeletons confirm the above results.

The correctness of these conclusions is questioned, the *facts* on which they depend are denied; and so it follows that the measurements were deceptive. Now it is impossible to measure those sixty healthy individuals again—for they have been scattered. And since *the case* cannot be rested on *them*, it becomes necessary to measure the normal lower limbs of a sufficient number of new individuals. And it may be that we shall find that nature imposes the law of variation on other lower limbs. We shall see.

In measuring lower limbs, for scientific or surgical purposes, I insist on the following method: Apply the tape-line to the limb with the figures down, so that they cannot be seen; when the tape-line may be turned, and the length of the limb noted; then let go the tape-line, and apply it in the same manner to the other limb; when the tape-line may again be turned, and the length of this limb noted. In order to insure accuracy of result, repeat the measurements several times on the same individual.

In measuring the lower limbs of new individuals, I have made the *under edge of the anterior superior spinous process of the ilium, at the insertion of the tensor vagina femoris, the point of departure above.* From this point I have made two sets of measurements, namely, *one to the external malleoli*, and *the other to the internal malleoli.* The measurements to the external malleoli accord with the plan of Dr. F. H. Hamilton. The agreements and the non-agreements of the external with the internal measurements are recorded. In the following table of measurements I have rejected all differences less than one-eighth of an inch.

Table No. II.

Containing age, nativity, occupation and the comparative measurements of the lower limbs of forty-two healthy individuals.

No.	Age.	Nativity.	Occupation.	Length in Inches.		Differences.			
				R. Limb.	L. Limb.	Internal.		External.	
						R.	L.	R.	L.
1	17	Sweden.	Sailor.	30 7/8	30 7/8	.....	.....	.....	.....
2	22	Norway.	Sailor.	32 1/2	33 1/4	.....	3/4	.....	3/4
3	16	Norway.	Sailor.	28 1/4	29	.....	3/4	.....	3/4
4	14	Italy.	Sailor.	28 1/4	28 1/2	.....	1/4	.....	1/4
5	25	Norway.	Sailor.	25 1/2	25 1/2	...	.....	..	.....
6	31	Norway.	Sailor.	33 1/2	34	.....	1/2	.....	1/2
7	34	Italy.	Sailor.	30	30	.....	.....	.....	.....
8	25	Ireland.	Laborer.	35 3/8	35 3/4	.....	3/8	.....	1/4
9	18	England.	Sailor.	30 1/2	30 1/4	1/4	.....	1/2	.....
10	25	Ireland.	Mason.	30 3/4	30 1/2	1/4	.....	3/4	.....
11	19	Finland.	Sailor.	32	32	.....	.....	.....	.....
12	19	Italy.	Sailor.	34 3/8	34 1/8	1/4	.....	1/2	.....
13	37	Portugal.	Sailor.	33	33	.....	00	.....	1/2
14	22	Norway.	Sailor.	37	37 5/8	.....	5/8	.....	5/8
15	21	U. S. A.	Loborer.	32 1/4	32 3/8	.....	1/8	.....	1/8
16	16	England.	Printer.	32 3/8	32	3/8	.....	00	.....
17	34	Ireland.	Laborer.	34 1/2	34 7/8	.....	3/8	.....	3/8
18	25	U. S. A.	Laborer.	34 1/2	34 3/4	.....	1/4	.....	1/4
19	21	Italy.	Sailor.	32	32 1/4	.....	1/4	.....	1/4
20	38	Italy.	Sailor.	30	30 1/4	.....	1/4	.....	1/4
21	37	Ireland.	Laborer.	34 1/2	35	.....	1/2	.....	1
22	52	U. S. A.	Cooper.	33 5/8	34	.....	3/8	.....	00
23	24	U. S. A.	Laborer.	33 1/2	33 3/4	.....	1/4	.....	1/4
24	45	Ireland.	Laborer.	34 1/4	34 1/2	.....	1/4	.....	1/4
25	17	Bahama.	Epileptic.	33 1/2	34 1/8	.....	5/8	.....	5/8
26	30	Ireland.	Painter.	32 1/4	32 1/4	.....	.....	.....	.....
27	23	U. S. A.	Laborer.	37 1/2	37	1/2	.....	1/2	.....
28	37	Ireland.	Stevedore.	35 3/8	35 5/8	.....	1/4	.....	1/4
29	23	Ireland.	Laborer.	33 1/2	33 1/4	1/4	.....	1/4	.....
30	50	U. S. A.	Carpenter.	35 1/4	35	1/4	.....	00	.....
31	44	Germany.	Mechanic.	36 5/8	36	5/8	.....	3/8	.....
32	14	U. S. A.	School-Boy.	30 1/2	30 1/2	.....	.....	.....	.....
33	8	U. S. A.	School-Boy.	24	24	.....	.....	.....	.....
34	31	Ireland.	Porter.	33 1/4	33 3/4	.....	1/2	.....	1/2
35	52	Scotland.	Sailor.	32 3/4	32 3/4	.....	.....	.....	.....
36	7	U. S. A.	School-Boy.	21 3/4	21 1/2	1/4	.....	1/4	.....
37	33	Ireland.	Laborer.	34 1/4	34 5/8	.....	3/8	.....	1/8
38	34	England.	Mason.	33 1/2	33 1/2	.....	.....	.....	.....
39	60	Ireland.	Laborer.	34 3/4	34 3/4	.....	.....	.....	.....
40	12	U. S. A.	School-Boy.	26 1/2	26 1/2	.....	00	.....	1/4
41	5	U. S. A.	None.	18 5/8	18 5/8	.....	00	.....	1/4
42	6	U. S. A.	School-Boy.	21	21 1/4	.....	1/4	.....	00

The measurements recorded in the above table were made with great care, and from them may be drawn the following conclusions:

1. There were thirteen cases in which the normal lower limbs were of equal length.

2. There were twenty-nine cases in which the normal lower limbs were of unequal length.

3. In twenty cases the left lower limb was longer than the right.

4. In nine cases the right lower limb was longer than the left.

5. In one case there has been recorded a difference of one-eighth of an inch.

6. In fourteen cases there has been recorded a difference of two-eighths of an inch.

7. In five cases there has been recorded a difference of three-eighths of an inch.

8. In four cases there has been recorded a difference of four-eighths of an inch.

9. In three cases there has been recorded a difference of five-eighths of an inch.

10. In two cases there has been recorded a difference of six-eighths of an inch.

11. The internal and the external measurements of the lower limbs were sometimes nearly equal.

12. The external measurement of a lower limb is sometimes an inch greater than the internal measurement. The excess is frequently over half an inch.

13. The difference between the internal measurements and the difference between the external measurements of the lower limbs were the same in twenty-eight of the forty-two cases described in the above table.

14. The difference between the internal measurements and the difference between the external measurements of the lower limbs were *not the same* in *fourteen* of the forty-two cases described in the above table.

15. In one case, the *difference* of the *differences* was one-eighth of an inch.

16. In nine cases, the *difference* of the *differences* was two-eighths of an inch.

17. In two cases the *difference* of the *differences* was three-eighths of an inch.

18. In two cases the *difference* of the *differences* was four-eighths of an inch.

19. In three cases the internal measurements were *equal;* and in the same three cases the external measurements were *different*—two varied two-eighths of an inch, and one varied four-eighths of an inch.

20. In four cases the external measurements were *equal;* and in the same four cases the internal measurements were *different*—two varied two-eighths of an inch, and two varied three-eighths of an inch.

21. The external measurements are subject to the same differences as the internal measurements, with few exceptions.

22. *The external measurements of normal lower limbs are no more reliable than the internal measurements of the same limbs.*

As my recent investigations and observations tend in the same direction as my former, I infer that my former investigations and observations were properly made and correct. Hence both sets of investigations and observations may be put into one class, and conclusions drawn from them.

The table of measurements previously made and published contains sixty cases; the present table contains forty-two cases; and this makes one hundred and two cases in all. The following conclusions are based on internal measurements of the lower limbs.

I. In each of the twenty-three cases the normal lower limbs were equal by measurement.

II. In each of seventy-nine cases the normal lower limbs were unequal by measurement.

III. The equal cases are to the unequal cases a $1:3\frac{10}{23}$.

IV. In twenty-seven cases the *right* lower limb was the longer.

V. In fifty-two cases the *left* lower limb was the longer.

VI. The difference in the length of the normal lower limbs of the same person varies from one-eighth of an inch to one inch. One case had a *left* lower limb one inch and three-eighths of an inch longer than the right limb; this belongs to my previous table. Another case had a *right* lower limb one inch and one-half of an inch longer than the left limb; this will be described below, not being admitted to my second table.

VII. In twenty-six cases there was a difference in the length of the lower limbs of one-half of an inch and more.

VIII. In nine cases there was a difference of more than one-half of an inch.

IX. In one hundred and two cases, *the average difference, in length of normal lower limbs, is twenty-eight-one-hundredths of an inch—practically, one-quarter of an inch.*

The following corroborative evidence was alluded to in my previous paper, on "Shortening of the Femur after Fracture." It will be of interest to note it more particularly in this place.

a. Measurements of the two femora of the same skeleton:

1. Left femur, from the summit of the head of the femur to the base of the internal condyle, measures 17⅛ inches.

2. Right femur, from the summit of the head of the femur to the base of the internal condyle, measures 17 inches. *The difference is one-eighth of an inch in favor of the left femur.*

3. From the summit of the left trochanter major to the base of the external condyle the *left* femur measures 16½ inches.

4. From the summit of the right trochanter major to the base of the external condyle the *right* femur measures 16¼ inches. *The difference is one-fourth of an inch in favor of the left femur.*

5. The *left* femur weighs 12½ oz. avoirdupois.

6. The right femur weighs 12¼ oz. avoirdupois. *The difference is one-fourth of an ounce in favor of the left femur.*

b. Measurements of the two femora of another—but the same—skeleton:

1. From the summits of the heads of the femora to the bases of the internal condyles, the *right femur* measures one-half inch longer than the left.

2. From the summits of the great trochanters of the femora to the bases of the external condyles, the *left femur measures one-fourth of an inch longer than the right.*

3. The *left* tibia measures three-eighths of an inch longer than the *right.*

4. The right and left fibulæ are about equal in length.

5. The right femur weighs 14 oz. avoirdupois.

6. The left femur weighs 15½ oz. avoirdupois. *The difference in favor of the left femur is one and one-half ounces.*

Newton's law of gravitation defends the law of organic variation: it helps to prove the facts of *a-symmetry* of the human body.

c. Of interest is the following case, met with while making the measurements recorded in the above table: Age, 42; nativity, Ireland; is a laborer; and is not included in my table, for obvious reasons: he had never had a fracture, but he limps.

1. The *right* internal measurement is 35¾ inches; the *left* internal measurement is 34¼ inches; *and the difference is* 1½ *inches.*

2. The *right* external measurement is 36 inches; the *left* external measurement is 34¾ inches; *and the difference is* 1¼ *inches.*

3. The circumference of right thigh at the middle is 19½ inches; the circumference of left thigh at the middle is 14½ inches; *and the difference is* 5 *inches.*

The difference in size of the lower limbs of this case was first noticed by the family physician when the individual was about six years of age. It is a case of mal-nutrition. The formative forces of nutrition have been greater in the right than in the left lower limb. The principle of variation in this case is the same as it is in the cases tabulated above. In one instance we speak of *disease,* and in the other we speak of *a-symmetry.*

d. One of the cases of fracture of the femur treated by me since the publication of my previous paper may be described in this connection:

Charles Gates, a school-boy, 12 years of age, born in England, was

admitted to the Long Island College Hospital, April 26th, 1877, with a fracture of the right femur in the middle third, caused by falling about ten feet. The patient was "thin," and it could be readily determined that the fracture was nearly transverse, the fragments having the usual displacement. The injured limb was nearly two inches shorter than the other. I applied Buck's apparatus, with an extending weight of eight pounds, elevating the foot of the bed to produce counter-extension, when the injured limb was one inch shorter than the un-injured limb. *The next day I applied about 200 pounds extending force, in the form of traction by the hands, and the left lower limb was still one inch longer than the right lower limb.* The constant extending weight was then increased to twelve pounds. For the time being, I confess, that the case "worried" me; as I had treated fractures of the femur in boys, with eight pounds extending weight, resulting in equal length of lower limbs. But it then occurred to me to make the following comparative measurements of corresponding parts of the limbs of my patient, in the presence of several medical students and surgeons:

1. The left arm measured one-half inch longer than the right arm. That is, the *left* humerus was one-half inch longer than the *right* humerus. It had grown faster.

2. The left leg measured one-half inch longer than the right leg. That is, the *left* tibia was one-half inch longer than the right tibia. It, too, had grown faster.

3. The left thigh measured one-half inch longer than the right thigh, of which the broken femur was under treatment. *Hence, the actual shortening of the right femur was one-half inch.* Either the right femur was originally shorter than the left, in this case, or it had been shortened by the fracture. If it had been shortened by the fracture, then it was originally not shorter than the left, and there must have been overriding of the ends of the fragments; but of this there was no evidence. In fact, there was quite conclusive evidence that the bony fragments were applied, end to end, at the outset, during and at the close of treatment. The case did well and the boy subsequently did not limp.

As bearing upon the same question of a-symmetry, the subjoined case is introduced, namely:

A patient, 25 years of age, came to my office three weeks after receiving a contusion of the left shoulder. He had some inflammation of the sub-deltoid bursa and slight synovitis of the shoulder-joint. The head of the humerus could be distinctly determined to be in the socket, *and nowhere else.* Repeated careful measurements of both arms showed that the *left arm* was *one-half inch* longer than the *right arm.* Did the con

tusion and the subsequent inflammation, or did development, elongate this left arm? My answer is: Development had most to do with the elongation. Cases could be accumulated that have a similar import; but it does not seem to be necessary to spend the time. Strong corroborative evidence could be adduced, in the form of known and acknowledged a-symmetry of other corresponding structures of the body, but that is not requisite at present.

Whatever appearance the facts of development, above described, may have to the sense and the reason, they must agree with other *related* facts—or rather, the accidental facts of injury will, when properly understood, conform to and not contradict the actual facts of development; for the truth agrees with itself on the circumference, on the radius, and at the centre of the circle where it exists. In other words, there are two sets of facts, in regard to shortening of the femur, that are intimately related to each other. The facts of development will not contradict the facts of injury; and the facts of injury will not contradict the facts of development. The only difficulty that could arise, consists in not seeing the agreement and the conformity of the two sets of related facts.

In one set of facts we find a *natural inequality* of the length of the lower limbs, amounting to an average of one-quarter of an inch. In another set of facts we find *shortening* after treatment of fracture of the femur. The *inequality* of the length of the lower limbs, following the treatment of fracture of the femur, may be denominated *accidental.* It is not, in any sense, a question as to the *accidental shortening* of the femur, which is proven by the experience of Scultetus, Chelius, Colles, Velpeau, Nealaton, Malgaigne, Sir Astley Cooper, Mott, Parker, Hamilton, Buck and others; but it is a question of *how much average accidental shortening the femur may have.* Some say that the accidental shortening is from one-fourth to three-fourths of an inch; some say that the accidental shortening is one inch; some give the extent of the accidental shortening in particular cases; Dr. Hamilton estimates the average accidental shortening of the femur to be about three-fourths of an inch; Dr. Buck records the accidental shortening of the femur in 149 cases: those under fifteen years of age had an average shortening of three-eighths of an inch, and those over fifteen years of age had an average shortening of five-eighths of an inch. And various surgeons have reported cases in which there has been no accidental shortening of the femur.

Suppose we adopt five-eighths of an inch as an approximate standard of accidental shortening of the femur—*even though it is probable that this standard is too small.* The question is now in regard to the *relations* of the *natural* and the *accidental shortenings* of the femur. How does the *natural* inequality affect the *accidental* inequality of the lower limbs?

If the longer normal lower limb have its femur broken, it is evident that the accidental shortening *will not include* the normal inequality, *because* the *shorter normal lower limb has been made the standard of measurement.* And if the shorter normal lower limb have its femur broken, it is also evident that the accidental shortening *will include* the normal inequality of the limbs, *because the longer normal lower limb has been made the standard of measurement.* In one case the natural inequality of the lower limbs has been added to the accidental inequality; and in the other case the natural inequality has been subtracted from the accidental inequality of the lower limbs. Now if we suppose, as we may well suppose, that the number of longer lower limbs, having the femora broken, and the number of shorter lower limbs, having the femora broken, may, in the "long run," be about equal, then the natural inequality would be added about as often as it would be subtracted; and, truly, that would not materially affect the *average observed accidental shortening.* Hence, we may conclude that the average shortening of a broken femur is about five-eighths of an inch after treatment—that is, the best treatment. But we may also conclude that, under average treatment, the shortening of the femur will be, on the average, about three-fourths of an inch. In general it must be admitted that the left lower limb will afford more favorable cases, after fracture of the femur, than the right; and that the left lower limb will be more apt to have an apparent elongation than the right, because it is oftener the longer limb, and because the extremely long limbs are, so far as we now know, commonly found on the left side.

The sound limb has been made the standard of comparison. Let us apply this standard to the 102 normal cases whose measurements are recorded in my two tables: Suppose the longer limb in each case to have its femur broken—or the equal limb to have its femur broken; *then there would be an average shortening of five-eighths of an inch.* How many natural inequalities in the 102 cases, that are greater than five-eighths of an inch? Why, *there are only five.* These five *excessive* natural inequalities may be distributed as follows:

I. There are two natural inequalities of three-fourths of an inch: These would give an excess of only one-eighth of an inch—a difference too small for serious practical consideration, especially when we remember that surgeons have been only desirous of making a fractured bone correspond in length with its associate; indeed, the surgeon would be satisfied with extension enough to make the limbs of equal length.

II. There is one natural inequality of seven-eighths of an inch: This would give an excess of only two-eighths of an inch—a difference that could be readily noted.

III. There is one natural inequality of one inch: This would give an

excess of three-eighths of an inch—a difference that could not well be overlooked.

IV. There is one natural inequality of one inch and three-eighths of an inch : This would give an excess of three-fourths of an inch—a very marked difference.

There is one natural inequality of one inch by the external measurements, but this is excluded from the present question, for obvious reasons.

In the next place, I may state, without fear of contradiction, that surgeons hitherto have only aimed at making the lower limbs equal after fracture of the femur—on the supposition that they grew of equal length. But every practical surgeon knows how difficult it is at times to obtain as little as one inch shortening after fracture of the femur—it is only possible by means of the maximum of extension; and he also knows how easy it is at times to prevent any shortening whatever, by means of the minimum of extension. The latter condition may have occurred to an adult, and the former condition may have occurred to a boy under 15 years of age; I have reported such cases. The natural inequality of the lower limbs goes far to explain this important practical difference. The cases that did not become shorter after fracture of the femur were not all transverse fractures. In fact, among the 102 cases measured by me, there are nine in which the natural inequality of the lower limbs exceeds one-half inch: This, under the ordinary plans and *expectations* of treatment, *would give nine so-called perfect results*, that is, one in about every eleven. A very striking agreement with the words of Dr. Hamilton, who says, that "in nine out of every ten cases of fracture of the femur we do get actual shortening."

But the truth is, *there are cases in which the lower limb, whose femur has been broken, is longer than its associate, after treatment of the fracture.* I gave an account of a case of this kind in my previous report: The injured limb was one-half inch longer than the uninjured limb; and it is of interest to note that the left femur was broken. Cases of this kind will be found at times under the best and most thorough treatment of fracture of the femur; probably not under treatment which aims to make the lower limbs equal.

And now the important question arises: How often would we expect to meet a case in which the lower limb, after treatment of a fracture of its femur, would be longer than its associate? Let us come to a conclusion from our measurements of normal limbs as a basis. See both tables. Case No. II of my previous table is no doubt exceptional, and may be excluded now as it was excluded then in drawing conclusions; so that we have left two cases that might give us longer limbs, provided they

were treated with a conviction that they were originally longer than their associates, which is not at all likely to happen. But suppose they were so treated after fracture. The two cases are on the left side, and the 102 cases would require to be injured on the *left side*, to include the two cases; and as many more cases would require to be fractured on the *right side* to equalize the chances of injury. This would make two instances in over 200 cases—*say one instance of longer lower limb in 100 cases*, as this would be a liberal estimate. Now at present I have no means of determining accurately the relative frequency of fracture of the right and left femora. It has been assumed that they are broken equally as often, but in a general way I am inclined to the view that the right femur is broken oftener than the left; and if so, we would not meet instances of longer lower limb after fracture as often as once in 100 cases. And if the longer normal lower limb were occasionally found on the right side—say one of the two in the next 100 cases—that would make the chances still less; that is, under the most skillful treatment, we may expect only one case out of about 150 to show a longer lower limb, after fracture of its femur. But if we include all kinds of treatment, we may not expect more than one case out of 200 to show the injured limb to be longer than the other. Now as near as I can determine from the sources of information at hand, about 900 cases of fracture of the bones of the lower extremities were treated in the Pennsylvania Hospital during a period of 123 years; a very liberal estimate would make 400 of these cases fractures of the femur. *Hence, in the surgical practice of a large hospital, we could only expect to find one case in which the lower limb, after fracture of its femur, was longer than the other, in a period of sixty years.*

It is seen, then, that the facts of development agree with the facts of accident; that there is no contradiction whatever; that if the former facts are true, the latter must conform to them; that the surgeon works just as well as if all lower limbs were made of equal length; that one surgeon may be called to treat the broken femur of a longer lower limb; that another surgeon may be called to treat the broken femur of a shorter lower limb, just as it may happen; that the natural inequality of the lower limbs may be put as a burden on the professional shoulders of one; that the natural inequality of the lower limbs may be removed from—or not put on—the professional shoulders of another; that the latter surgeon will be able to show, as the result of *his* work, equal or nearly equal lower limbs; that the former surgeon will be able to show, as the result of *his* work, unequal and *very* unequal lower limbs; that one will be called *unskillful*, that the other will be called *the skillful surgeon;* that one does not especially deserve praise; that the other is not to be blamed; that the surgeon who has great accidental inequalities in his practical results may

have treated his cases in the best manner; that the surgeon who has small accidental inequalities in his practical results may have treated his cases with ordinary care and skill; that one looked upon himself as a great surgeon, when nature was covering up his faults; that another was cast down, when nature had unwittingly worked against him; that the perils of the law hang over the head of one surgeon, and that emoluments flow into the pockets of another surgeon. And it is seen, also, that there is an amazing variation in the differences of the lengths of the lower limbs after treatment of fracture of the femur; that muscular contraction plays some part in this variation; that the strong fascia resists the extending force; that the common tendency to contraction during the process of repair causes some shortening—*but that the variation in the accidental inequalities of the lower limbs depends largely upon the natural inequalities*, since the natural inequality—that is, the difference—is sometimes added to and sometimes subtracted from the accidental inequality or difference. *In other words, if the normal lower limbs were always perfectly symmetrical, we should not have such variation in the differences of practical results.*

Just as I am finishing the last paragraph above, the postman brings me a letter from my constant friend and former teacher, Frank H. Hamilton, M.D. It is characteristic of the man. And, in my judgment, it will do science and the profession most service to be put on record at once. Here it is:

My Dear Doctor: New York, Jan. 1, 1878.

I have done you and science an injustice, and I make haste to repair the wrong. Yesterday I, for the first, found time to verify, by actual observation, the correctness of your statement and that of Dr. W. C. Cox, of Philadelphia, that the femora of most adults are unequal in length. In a dozen or more measurements, made with great care by my house surgeon and by myself, a large majority were found of unequal length, and the left limb was generally the longest. I propose to extend my observations and to give them more precision, but I have made enough to satisfy me that you are correct.

Permit me to add that you have in this matter, as well as in many other matters pertaining to the subject of fractures, made a most valuable and instructive contribution to the science of surgery and to medical jurisprudence. It is only by such careful observations that surgery is destined eventually to be accepted as a science as well as an art. As a contribution to medical jurisprudence your observations and the observations of those who have preceded you in these measurements, will do more than anything which has been before done to protect our profession against unjust prosecutions in this class of cases.

Nevertheless, the fact remains that femora do generally shorten after fracture, since in nine cases out of ten it is the broken femur which is found the shorter, *after* being broken; but just how much it has shortened we shall now be unable to decide.

You are at liberty, my dear doctor, to make whatever use you choose of this letter.

Very truly yours, FRANK H. HAMILTON.

Jarvis S. Wight, M.D.

And now in conclusion it must be admitted that:

1. The greater number of normal lower limbs are unequal in length.

2. The left lower limb is oftener longer than the right lower limb.

3. The *probable average natural* inequality of the lower limbs is about one-quarter of an inch—perhaps a little more than this.

4. The *probable average accidental* inequality of the lower limbs, after good treatment of fracture of the femur, is about three-quarters of an inch.

5. The facts of development and the facts of accident are in accord.

6. There will be about one case in ten—or eleven—that will give lower limbs of equal length after treatment of fracture of the femur. There will be accidental inequality in the rest—that is, nine-tenths.

7. In every 100 or 200 cases, the lower limb whose broken femur has been well treated will be somewhat longer than its normal associate. This ratio is not surely fixed as yet.

8. One such case of apparent elongation after fracture of the femur may be expected to occur in the surgical service of a large hospital in a period of sixty years.

9. Most surgeons may not expect to see such a case in private practice, though it might fall to the lot of any one.

10. It is impossible for the surgeon to make lower limbs always of equal length after fracture of the femur. *Any claims to that effect cannot be credited.*

11. The surgeon cannot be expected to make a bone longer than nature made it before it was broken.

12. One limb cannot always be the standard of length for its associate limb.

13. The only perfect standard of a lower limb of which the femur has been broken is the limb itself before injury.

14. In cases of doubt—or great accidental inequality—it is important to measure other corresponding normal bones of the same body; which may afford valuable information in regard to treatment.

15. So far as we now know, it is better to break the *left* than the right femur.

16. In treating fractures of the femur, common sense and the accepted rules of experience must guide our efforts.

17. The time may come when *surgery* will be an exact science—and be numbered among the highest arts.

18. Desirable results can be obtained only by learning and submitting to the facts.

19. A knowledge of the facts of *a-symmetrical* development will tend to prevent suits at law for malpractice.

20. *Judges and jurors must obey the mandates of science and let the wrongly imperiled surgeon go free.*

Table No. I.

(From Archives of Clinical Surgery.) Containing comparative measurements of 60 normal cases.

No.	Age.	Occupation.	Nativity.	Length in Inches.		Differences.	
				R. Limb.	L. Limb.	R.	L.
1	32	Clerk.	Canada.	33¾	33½	¼	.....
2	22	Nurse.	U. S. A.	31¾	31¼	½	.....
3	24	Clerk.	England.	33	33	.....	.....
4	47	Carpenter.	Germany.	32½	32¾	.....	¼
5	18	Sailor.	Germany.	35	35½	.....	½
6	24	Sailor.	Norway.	34	33⅝	⅜	.....
7	30	Sailor.	U. S. A.	32¾	33¼	.....	½
8	19	Sailor.	Norway.	30	30½	.....	½
9	28	Sailor.	Scotland.	31	31½	.....	½
10	27	Sailor.	Negro, W. I.	35	35½	.....	½
11	44	Nurse.	Holland.	31	32⅜	.....	1⅜
12	14	School-Boy.	Ireland.	31¼	31¼	.....	.....
13	44	Laborer.	Ireland.	34½	35	.....	½
14	37	Laborer.	Ireland.	33¾	34¾	.....	1
15	12	School-Boy.	U. S. A.	30½	30¾	.....	¼
16	14	Sailor.	U. S. A.	31¼	31	¼	.....
17	25	Sailor.	Colored, U. S.	31¼	31	¼	.....
18	34	Sailor.	Italy.	32	32½	.....	½
19	21	Sailor.	Norway.	30½	30½	.....	.....
20	19	Sailor.	U. S. A.	34⅛	33¾	⅜	.....
21	24	Sailor.	Nova Scotia.	35¾	36⅛	.....	⅜
22	40	Sailor.	England.	34½	34½	.....	.....
23	32	Sailor.	New Brunswick.	34½	34¼	¼	.....
24	28	Sailor.	U. S. A.	34½	34	½	.....
25	25	Sailor.	U. S. A.	32	32	.....	.....
26	22	Sailor.	England.	34½	34¾	.....	¼
27	22	Sailor.	U. S. A.	35	35	.....	.....
28	31	Sailor.	Norway.	31½	32	.....	½
29	19	Sailor.	Sweden.	35	35	.....	.....
30	23	Sailor.	Finland.	32⅛	32¼	.....	⅛
31	20	Sailor.	Austria.	33	32¾	¼	.....
32	29	Sailor.	U. S. A.	34	34¼	.....	¼
33	21	Sailor.	Dalmatia.	34½	34¼	¼	.....
34	37	Janitor.	Ireland.	32	32½	.....	½
35	33	Messenger.	Scotland.	33½	34	.....	½
36	24	Mechanic.	U. S. A.	32½	32¼	¼	.....
37	32	Laborer.	U. S. A.	31¼	31	¼	.....
38	32	Salesman.	Ireland.	33⅛	33	⅛	.....
39	58	Laborer.	Ireland.	34¼	34½	.....	¼
40	30	Plumber.	Ireland.	32	32¼	.....	¼
41	12	School-Boy.	U. S. A.	27½	27½	.....	.....
42	35	Peddler.	Ireland.	32⅞	33	.....	⅛
43	14	None.	U. S. A.	30½	30	½	.....
44	36	Laborer.	Ireland.	31½	31¼	¼	.....
45	39	Salesman.	Ireland.	31¼	31½	.....	¼
46	30	Laborer.	Ireland.	32¾	32½	¼	.....
47	24	Laborer.	Ireland.	34⅞	35¼	.....	⅜
48	33	Sailor.	Austria.	33½	33¼	¼	.....
49	29	Clerk.	Ireland.	36	36	.....	.....
50	40	Laborer.	Ireland.	34¼	34½	.....	¼
51	56	Laborer.	Ireland.	32¾	32¾	.....	.....
52	44	Laborer.	Germany.	31½	31⅝	.....	⅛
53	41	Druggist.	U. S. A.	36	36¼	.....	¼
54	20	Sailor.	Denmark.	34¼	34½	.....	¼
55	18	Sailor.	Germany.	34	34¼	.....	¼
56	21	Sailor.	Germany.	33¾	34	.....	¼
57	24	Sailor.	Austria.	36½	36¾	.....	¼
58	26	Sailor.	Ireland.	33¼	33	¼	.....
59	26	Sailor.	Finland.	31¼	32⅛	.....	⅞
60	29	Sailor.	Italy.	30⅛	30¾	.....	⅝

PRACTICAL POINTS IN THE TREATMENT OF STRABISMUS.

BY A. MATHEWSON, M.D.

It is not the purpose of this paper to go over the whole subject of Strabismus, but to consider a few practical points in its causation and treatment, which, though not wholly new, are, I find from conversation with members of the profession, not so generally understood as from their importance they deserve to be. My remarks will refer to convergent strabismus, will not concern deviations caused by paralysis, and are founded on a comparison of the views of the best modern authorities, tested by my own experience in the past ten years with some three hundred cases under observation in the practice of myself and others, and with the results of seventy cases of operation in my practice.

One of the most important facts in the history of convergent strabismus is its connection in the great majority of cases with the error of refraction known as hypermetropia. This consists in an antero-posterior diameter of the eye too short relatively to its refractive power. The retina lies too far forward, too near to the lenses of the eye, so that in order to bring rays of light to a focus upon it, an excessive demand is made on the focalizing function, or accommodation, as it is technically called.

Rays of light from objects distant twenty feet or more strike the eye nearly parallel, and in an emmetropic or normal eye are brought to a focus on the retina by the refractive power of the cornea and crystalline lens, the latter not being acted on by the ciliary muscle, the muscle of accommodation.

But in the hypermetropic eye the focus of parallel rays lies behind the retina, and consequently there is no distinct vision without an exercise of accommodation—that is, without the crystalline lens being made more convex by the action of the ciliary muscle, so that it refracts the rays of light more powerfully, and brings them sooner to a focus.

As in hypermetropic eyes even parallel rays coming from distant objects must be brought to a focus on the retina by increasing the curvature of the lens through the action of the ciliary vessels, much more must the ciliary muscle be strained to focalize divergent rays coming from near objects. Now this muscle is innervated by a branch of the

third nerve, as are likewise the internal recti muscles, which keep the eyes converged in looking at near objects, and these two actions of accommodation and convergence are very closely related. The nearer objects are brought to the eyes, the more must they converge in order to blind the images formed on the retinæ, and the more the accommodation exercised to bring the more diverging rays to a focus. The relation of these two functions is such that accommodation is assisted by convergence; or, differently put, when in hypermetropia great demand is made on the ciliary muscle, the excessive nervous impulse is also converged to the internal recti muscles, and they contract so strongly as to make the visual axes meet at a point nearer than the object, and strabismus results.

The occurrence of strabismus is in many cases ascribed to frights, falls and other like causes; but these are usually coincidences, not causes, for back of them lies this refractive error as the real cause. This dependence of strabismus in the large majority of cases (75 [Donders] to 85 [Wecker] per cent.) on a condition of refraction, makes it a very different matter from a simple contraction of a muscle, and its treatment a much more difficult problem than the simple cutting of a tendon, as in the orthopœdic surgery of other parts. It was ignorance of this connection, and because it was put on the same footing as the treatment of talipes, that for years after its introduction by Stromeyer in 1838, strabotomy was unsuccessful in so many cases, and fell into disrepute.

The percentage of hypermetropic eyes in which strabismus is present is small; and it is hard to explain why, when this refractive error is so common, there are not more cases of strabismus.

It is also not most frequently found in the higher degrees of hypermetropia, as it might seem reasonable to expect. This is accounted for by the fact that, in such cases, no accurate focus can be attained even by excess of convergence; and so the useless excessive tension of the interni is relaxed in favor of binocular vision. On this same ground is based the atropine treatment of strabismus; for not unfrequently, at the very beginning, by paralyzing the ciliary muscle by this agent, and thus making it impossible to obtain an accurate focus, the over-convergence will be given up and the strabismus disappear.

Correction of hypermetropia by means of convex glasses will sometimes put an end to strabismus, providing it has not already existed too long. In some instances the squint does not appear as long as the glasses are on, but presents itself as soon as they are taken off.

For the same reason it is in some cases almost impossible, even after setting back the interni to any safe extent by operation, to prevent strabismus from recurring, except by the use of convex glasses, for a time, at least.

In this way it happens that those who are ignorant of this cause of strabismus are often disappointed in the results of operation, and disposed to blame the method of its performance, not realizing that acting causes must be removed before effects will cease to follow. This matter should be fully explained beforehand to the patients or friends, and the possible necessity of wearing glasses, to prevent recurrence of deviation, should be insisted on. At first they may have to be worn constantly, but with the hope of afterward laying them aside, except, perhaps, in near work, in which the necessity may still exist. It is, of course, a misfortune to be born with eyes subject to this error, and to have to wear glasses for its correction; but it is best to submit gracefully to the inevitable, and be thankful that the nature of the trouble is so well understood, and its remedy so easily applied.

Although, as I have stated, the tendency to strabismus may sometimes be overcome by removal of its cause, either by keeping the eyes under the influence of atropine for a time, or by early resort to the use of convex glasses, in my own experience these means *alone* have usually proved ineffectual, and operation had to be resorted to in the end. In case of a little girl, aged two and a half years, whom I first saw in July last, convergent strabismus, with marked deviation of the left eye, had been noticed only three days, caused, doubtless, by hypermetropia. I first tried atropine with correction of strabismus for a short time, and afterward convex glasses, which completely relieved it for several weeks; but the deviation appeared again, in spite of the glasses, and on the 5th of December the tendons of both interni were cut and a limiting suture put in on the right side, since which time no tendency to squint has shown itself, while the mobility of the eyes in all directions is perfect.

In another case the child of a member of this Society was, for a time, relieved of convergent strabismus by the use of atropine; but it returned when its use was discontinued.

The old plan of correcting strabismus by bandaging the eye, ordinarily fixing or straight, or by means of spectacles with slits arranged so as to compel the squinting eye to give up its deviation, was founded on a false theory, and proved ineffectual in practice. As soon as the usually deviating eye is made to "fix" or direct its visual axis straight upon the object looked at, in either of these ways, the squint is at once transferred to the other eye.

Occasionally strabismus will disappear of itself, even after existing for years, as in two cases recently examined. One of these cases, the wife of a physician in this city, was the subject of convergent strabismus from her third to her fourteenth year, since which time it has passed away,

and only occasionally re-appears when she is tired. The eye which deviated is hypermetropic, the other being of normal refraction, and has imperfect vision. But as such cases are rare and not to be anticipated, and other means for the most part prove ineffective, operation must generally be resorted to.

As, by some, strabismus operations are held in disrepute, because, unaided by the correction of the refractive error on which the squint depends, they have known them to fail of their purpose, by others they are dreaded as likely to produce greater deformities than those they attempt to relieve. It is true that such was formerly not an unfrequent result, and that a convergent strabismus was not only changed to a divergent, with inability to move the eye in the direction of the divided muscle, but the eye rolled forward as well as outward, leaving an unsightly pit at the inner canthus. It was no wonder that those knowing of cases in which these things had happened, should shrink from an operation supposed to be necessarily attended with such dangers. But such results can always be avoided, and are due to faulty method of operation, based on an imperfect knowledge of the anatomy of the parts, and of other conditions of the problem.

One of the main causes of these bad results was the too free cutting away of the muscle or its tendon from its lateral attachments to the capsule of Tenon. The consequence of this was, the muscle was set so far back, that in its re-attachment it could not exert sufficient power on the eyeball to prevent its diverging under the influence of its antagonist, the externus, or it slipped back altogether into the orbit, losing all influence over the eye, and leaving it to protrude forward, as well as roll outward. By some authors the operation has been spoken of as a *myotomy*, or cutting of the muscle, which it never ought to be, but strictly a *tenotomy*, or cutting of the tendon. Even so excellent a work as Bernard and Huette's Manual of Operative Surgery has a plate representing the operation as a cutting of the muscle, and so far back that the evil results referred to would be very likely to occur.

The tendon only should be cut, and as closely as possible to its attachment to the sclera, while its lateral attachments to the capsule of Tenon should scarcely be touched.

In this way the muscle is simply set back sufficiently to restore a proper balance of power to the antagonist, the externus, but by these lateral attachments prevented from slipping back too far.

It is true that, in the majority of cases of well-marked squint, full correction will not be attained by this method save by operating on both

eyes, and this is just what my own experience has led me to do now almost invariably, save in the slighter forms. I ask your attention, especially, to this point of operating on both eyes, even where the squint is constantly confined to one eye. Why the "straight" eye should be touched is often a hard thing for the anxious patient or friends to appreciate the necessity of, but in many cases a perfect result cannot be otherwise obtained by any safe method of operation. To explain how it is that cutting the tendon of the undeviating eye helps to correct the deviation of its fellow, we will suppose a case in which the right eye has an excess of convergence, to correct which, the tendon of its internal rectus must be set back at least 4‴. If it is cut loose from its attachments freely enough to gain this effect, there is danger of getting an over-effect, so that, instead of setting the right internus back 4‴, we set it back but 2‴ or 3‴, and cut the tendon of the left internus so as to set it back 1‴ or 2‴. This setting back of the left internus necessitates the sending of a stronger nervous impulse to this muscle afterwards, in order to prevent the left eye from deviating outward. Now, the association of innervation and muscular action between the eyes is such, that this increased nervous impulse communicated to the left internus is also sent to the right externus, and in this way the remaining tendency to over-convergence of the right eye is corrected.

Besides its being safer to divide the effect of tenotomy between the two eyes, there is better adjustment of action and less tendency to asthemopia subsequently.

The question whether both eyes should be operated on at once, or on separate occasions, is not without importance. Where the deviation is so slight as to make it doubtful whether an operation on the squinting eye alone will not fully correct the squint, it may be well to try this first; but where it is more pronounced, my own experience has led me to operate on both eyes at once, because I feel quite sure that by carefully cutting the tendons, and using limiting sutures, if needed, I shall not produce an over-effect, while the patient is saved the annoyance of another operation. It sometimes happens, too, that in spite of the most explicit statement of the probable necessity of operating on the second eye after an interval, the patient or his friends, discouraged by the seeming want of success from the first tenotomy, or dreading a second operation, cannot be brought to it, and thus the operation is brought into disrepute, and the surgeon suffers in reputation.

The greater difficulty is to get effect enough by any safe method of operating, and in some cases, even with the use of glasses, to correct hypermetropia, and where the deviation was at first completely overcome,

a third tenotomy must be done—that is, the internus of the deviating eye must be set back still farther, in order to obtain a permanent effect. I have several times failed to get effect enough from a double tenotomy, but have never, so far as I know, produced a permanent over-effect with resecting divergence. In some cases, where the difficulty of correcting the squint is due to a weakened state of the stretched externus, this should be strengthened, if possible, by a special exercise, and by the use of electricity, as in cases related by Carter, of London.

Sutures are now much employed in strabismus operations, either to limit or to increase their effect. Where an over-effect is feared, they are introduced in such a way as to hold the divided tendon forward, and prevent it from slipping back too far. Where it is hard to obtain enough effect without too free use of the scissors, sutures are passed through a fold of conjunctiva to the temporal side of the cornea, and then through the skin at the outer canthus, and tied so as to keep the eye for a time forcibly turned outward.

The question as to the proper age to operate for strabismus, is often asked. Authorities differ on this point somewhat. My own opinion is, that it is better not to defer the operation, in most cases, much after the squinting habit has become fixed, the other means suggested having proved ineffectual in breaking it up. The muscles involved are less fixed in their faulty habit, more perfect co-ordination of action is secured, and there is more hope of restoration of the binocular vision than when the operation is deferred for years. Another very strong argument for operating early is found in the fact that in most cases the sight of the deviating eye becomes impaired, owing to the suppression of images to avoid double vision. As an example, the records of the Brooklyn Eye and Ear Hospital show that, in 46 cases recently noted by the house surgeon, Dr. Conner, the vision of the deviating eyes was as follows: In 2 cases patients count fingers at three feet; in 1 at eight feet; 1 at a few inches; in 2, vision=one-twentieth of normal; in 18, one-tenth; 2, one-third; 2, two-sevenths; 2, two-fifths; 5, one-half; 4, two-thirds; 7, one, or normal. The sight will usually improve after the operation, if this has not been too long deferred, with systematic exercise. In one of my cases vision rose from one-tenth to normal within a few weeks after operation. This exercise consists in covering the better eye, so as to compel the other to fix, and then reading large type with a magnifying glass, at first for a few minutes, gradually increasing the length of the task, and diminishing the size of the type. In case of children, when operation is for any reason deferred, the deviating eye should be exercised by itself, in order to prevent, so far as possible, impairment of vision.

THE USE OF DIGITALIS AND STRYCHNIA IN DISEASES IN WHICH DEATH TAKES PLACE BY ASTHENIA.

A CASE IN ILLUSTRATION.

BY S. G. ARMOR, M.D.

The relation of local to constitutional states has long been a subject of fruitful speculation to the pathologist. To the therapeutist these relations are of equal interest, and may be studied, perhaps, with even greater profit. I submit the following case as a brief contribution bearing upon this point.

Miss J., a maiden lady, aged about 35 years, was attacked on the 14th of December with what seemed to be intestinal obstruction. She came under the care of Dr. Geo. K. Smith, of this city, to whom I am indebted for most of the facts of the case.

At an early period an abdominal enlargement was detected to the left of the median line. It was doughy on feel, tender on firm pressure, and disappeared after full evacuation of the bowels. The inference was that it was a fæcal tumor. Following the evacuation of the bowels, the tenderness increased rather than diminished. It gradually extended, the bowels became tympanitic, pain was increased by deep inspiration, by coughing, by all bodily movements, and there was more or less elevation of temperature. The symptoms, in brief, were those of peritoneal inflammation, and the patient was at once put on opium in full and repeated doses, and the bowels kept quiet. The diet was at first mainly milk and lime-water.

December 21st, Dr. C. H. Giberson was called in consultation. Symptoms as above described. Temperature, 102°; pulse, 112. Opium treatment continued and quinine added.

December 25th, the twelfth day after the attack, I first saw the case in consultation with Dr. Smith. I found temperature 103½°, pulse 125, *with very low bloood pressure;* mind clear, local tenderness measurably gone, tongue moist and clean, stomach retaining nourishment well. But notwithstanding the liberal alimentation, in addition to the quinine, opium and stimulants which the patient was taking, the circulation was evidently failing.

In consultation we agreed to continue the treatment, giving the morphine hypodermically in smaller doses, and at regular and shorter intervals, for

its sustaining action on the nervous system. We added, also, to the brandy, aromatic spirits of ammonia; and agreed, in addition, to give her tablespoonful doses of the infusion of digitalis every two or three hours.

On the 27th (about twenty-four hours after commencing the digitalis, and apparently the result of it), the temperature fell to 102°, and the pulse to 100.

I saw her again on the 28th, at which time the pulse was 80, and the temperature 101°; capillary circulation good, tongue moist; but, for the first time, patient inclines to reject both nourishment and medicine. Regarding the stomach as of vital importance in the critical condition of the patient, we decided to withhold all medicine, continuing only the stimulants, nourishment, and morphine hypodermically administered. At no time did the patient exhibit any symptoms of opium poisoning.

On the 29th, stomach better, patient retains food and stimulants well; pulse, 95; temperature, 101½°.

On the morning of Jan. 1st I was hastily summoned to see her again, and learned that during the after part of the night the temperature suddenly rose, without any apparent cause, to 103½°, and her pulse, when I saw her at nine o'clock, was 156, "thready" and uncertain. There was also general "atonic congestion" of the capillaries; the face presented a dusky hue, the skin was bathed in cold, clammy sweat, respiration was superficial and feeble, the eye dull, listless, partly closed and fixed, the mind aroused to consciousness with difficulty, and the reflex function of the spinal so greatly depressed, that liquids were scarcely recognized when placed in the mouth. The patient had, in brief, the physiognomy of approaching death.

With this condition of things we administered, as a *dernier ressort*, the forty-eighth of a grain of strychnia, according to the following formula:

Strychniæ sulphat., 2 grains;

Aqua destil. (warm)—1 ounce. Mix.

Five minims contain one forty-eighth of a grain. This dose was repeated every two hours hypodermically during the day and following night, continuing stimulants, milk and beef-juice as the patient could be induced to swallow, supplementing deficiency of stimulants by the mouth by occasional hypodermic injections of brandy. Stimulating frictions were also applied externally, and everything was done to rouse the flagging condition of the nervous system.

Very remarkable improvement almost immediately followed. The dusky hue of the face disappeared, the eye became brighter, the mind clearer and more cognizant of surrounding objects, deglutition less diffi-

cult, the perspiration warmer, and the temperature once more came down to 102°, and the pulse from 156 to 120.

This condition of things did not last many days, however, until another class of symptoms, more alarming to the friends than the first, manifested themselves—namely, delirium, with greatly increased sensibility of the surface and of the organs of special sense. The reflex function of the spinal cord became so exalted, that the slightest peripheral irritation produced marked disturbance of the system. Hypodermic injections had to be abandoned for a time. Sleep, however, of several hours, which the patient had not had for some days, caused the delirium to subside, and produced general quietude of the nervous system.

Jan. 3d, patient was seen by Dr. Hesse, who advised the gradual lessening of the dose of morphine, and that muriate of quinine be administered hypodermically.

Jan. 14th, I learn from Dr. Smith that the patient continues to improve, and that the probabilities are she will make good recovery.

This case has been one of peculiar interest to me, for it involves questions of vast importance in Practical Medicine. The two points to which I desire to specially attract attention in this case are:

First. The great necessity of sustaining the heart and general nervous system in a large class of affections which terminate in death by *asthenia.*

Second. The manifest action of digitalis and strychnia in meeting these indications in the case reported. The improvement that followed was so rapid and unmistakable, that there could be no doubt on this point.

And their action in this case was such as I have frequently observed in similar cases.

In many cases of local inflammatory diseases (not dangerously involving vital organs) the patient often dies, I doubt not, from failure of heart action, before the local disease can run through its natural history. In all such cases TIME becomes an important element of cure, and the way to get such time is to guard well the "dead point of danger"—a weak and failing heart.

PATHOLOGICAL SECTION OF THE KINGS COUNTY MEDICAL SOCIETY.

Regular Meeting, April 26th, 1877.

Vice-President Dr. Mathewson in the chair.

REPORT OF MICROSCOPIC COMMITTEE.

Dr. Griffiths: Pyloric tumor appears to be fibroid.

Dr. Shaw's similar specimen is of sarcoma type, both in liver and stomach, being evidently very rapid in proliferation.

CIRRHOSIS OF LIVER.

Dr. Miner presented specimens from Dr. Segur.

J. C., 42; Ireland. St. Peter's Hospital, April 2d, 1877.

For two years has had ascites more or less, being at times entirely free from it. Able to work till two months ago. On admission has no appetite, but great thirst, and is found to be a chronic whisky-drinker. Urine normal. The enlarged abdomen being due to ascites, he was given the potash salts unsuccessfully.

On April 20th paracentesis was done, 228 fluid ounces of fluid being removed. Relief was temporary, and the accumulation increased till his death, a few days ago, having refused another tapping.

At the autopsy, the left chest filled with fluid, about one gallon, the lung being collapsed and carnified. R. lung adherent and œdematous; liver cirrhotic and beginning to be fatty; kidneys congested.

EXTIRPATION OF MECKEL'S GANGLION FOR FACIAL NEURALGIA.

Dr. George R. Fowler presented the history of this case. [Already printed in the "Proceedings." Patient has since died with cirrhosis of the kidneys, and a small neuroma was found on the nerve. Full particulars will be published as soon as the specimen has been examined microscopically by Dr. Shaw.—*Secretary.*]

Dr. F. remarked that Carnochan's first three cases were successful, and he had no trouble in finding the ganglion.

Dr. Wight considered the prognosis as good at first.

Dr. Fowler said his was up on the fourth day.

OVARIOTOMY—DEATH.

Dr. Rockwell presented an ovarian cyst, with the following history:

Miss E. B., 32, seamstress, has worked hard at the sewing-machine for some years. At beginning of 1877 menses became scanty, health failed, and abdomen became enlarged. After some time a physician was called, who considered it "bloating," and gave tonics, etc.

Finally, coming to the city, she consulted Dr. R., October 3d, 1876. Her health has been usually good till this time. Her size is that of a woman at term. Since February the catamenia are lessening, and she has had dysmenorrhœa. She has a large symmetrical tumor, which fills the abdomen, dull on percussion, and with marked fluctuation. It gives all the signs of ovarian cyst. A small tumor is found posterior to uterus, which is anteflexed.

A few days after the cyst was aspirated, giving albuminous fluid, specific gravity 1010., and containing "Drysdale's corpuscles."

Dr. Skene saw the case, and confirmed the diagnosis. The patient was sent home to prepare for electrolysis.

Nov. 8.—Is said to be much improved in health.

March 1, 1877.—Electrolysis: 12 cells negative to needle for 12 minutes.

March 4.—18 cells, 10 minutes.

April 23.—Refuses electricity; cyst removed; incision five inches; double ligature to pedicle, and cut by cautery knife, short.

She did well for a time, but died on fourth day, of peritonitis.

Dr. R. did not use drainage, as the peritoneum was left dry.

Dr. Wight, from the appearance of the growth, thought it might be found to be a cysto-sarcoma.

Dr. Westbrook remarked that Spencer Wells does not advise drainage.

Dr. Fowler had done ovariotomy, with removal of a similar growth, and should fear recurrence.

Dr. Rockwell said his prognosis had been unfavorable.

DIFFUSE ARTERIAL ATHEROMA—ANOMALOUS SYMPTOMS—DEATH.

Dr. Pilcher presented specimens as follows:

H. W. E., 67, robust, went to bed well April 8th, 1877, having taken a hearty meal late in the day.

At 4 A. M. had violent purging and colic, and felt much exhausted. He lay asleep most of the 9th, and did not awake on the 10th, and Dr. Griggs was called.

He could be roused to take medicine or liquid food, but fell asleep when let alone.

11th.—Still sleeping.

12th.—Sleep is more profound, and, P. M., Dr. P. saw him in consultation. Now could not be roused from his coma; pulse 75; respiration quiet and natural; heart normal. Did not pass urine to-day. Pupils contracted. Has no paralysis. No improvement followed, and he gradually sank, and died early on the 13th of April.

At the autopsy the organs were all normal in the pelvis and abdomen. Lungs normal; heart hypertrophic; valves normal; aorta and coronary

arteries atheromatous, but the calibre of the latter was not encroached upon. Lower part of abdominal aorta and common iliac turned into firm tubes. Unfortunately, permission to examine the brain was denied.

The theory of cause of death is: Extensive atheroma of arteries at base of brain, diminishing the blood supply. Heart being hypertrophied, was competent till the exhaustion from diarrhœa. Cerebral anæmia, progressive coma, and death.

Had had digitalis, belladonna, brandy and milk. Had no stertor. Apparently a perfectly healthy man.

Dr. Gray thought the theory was a sound one.

Dr. Westbrook exhibited a remarkable specimen sent to Dr. Armor.

A boy, 13, had vomiting and constipation. Had similar attack five years ago, and passed a mass supposed to be intestine.

March 24, 1877.—He vomited. Had a tumor, R. iliac fossa, size of fist. An injection caused tumor to disappear. He had a bloody discharge for 4 or 5 days, but was soon better.

April 12.—He passed the specimen, and is now out of bed.

It appears to be ilium invaginated into the colon, and is *a foot* long.

RUPTURE OF SPLEEN—DEATH.

Dr. Wight reported case of a man crushed with earth a few days ago, and dead to-day of shock. He had fractured ribs, a supra-condyloid fracture of the femur, and a ruptured spleen, filling abdomen with blood.

RESECTION OF ANKLE.

Dr. W. showed a specimen removed from a girl of 20, who had, three years ago, a lacerated wound of ankle (left), followed by synovitis and cellulitis. Repeated tenotomies were done, and finally both bones were resected on the 24th of April. The cartilage is eroded and the bones necrosed.

N. B. SIZER, *Secretary.*

Kings County Pharmaceutical Society.

OFFICERS:

GEORGE C. CLOSE.....*President.*
G. M. BAKER.....*First Vice-President.*
CYRUS PYLE.....*Second Vice-President.*
L. D. SHEETS.....*Third Vice-President.*
LOUIS E. NICOT.....*Secretary.*
R. J. OWENS.....*Treasurer.*
GEORGE A. NEWMAN, GEORGE H. NORFALK, HOWARD M. GROSS.....*Censors.*
L. T. PERKINS, S. CHICHESTER, THOMAS JONES, E. THEALL, JR, B. V. B. LIVINGSTON.....*Elective Trustees.*

TRANSACTIONS.

REGULAR MEETING—JAN. 15th, 1878.

Vice-President G. M. BAKER in the chair, and about sixty-five members present.

Messrs. G. W. Conn, J. M. Keane and F. P. Howland were proposed for membership. The Investigating Committee reported through their chairman favorably in the cases of Messrs. Robt. R. Whiting and Chas. R. Paddock, and they were elected members.

MR. WM. WYNNE, Chairman of the Special Committee for considering the subject of publishing the Transactions of this Society, reported that the committee had not yet been able to decide upon any plan which they could recommend, but would endeavor to do so at an early day.

MR. L. E. NICOT, Chairman of the Committee on Drug Law, reported that the bill which the Society had adopted had been presented to the Legislature by the Hon. Jacob Worth, that Mr. Worth had committed himself favorably to the bill ; and although he had no doubt of its passage, he would keep a watchful eye upon it, and apprise the committee, should any contingency occur which might require their presence at Albany.

Dr. G. M. Baker reported from the Board of Trustees that the Society had procured its charter, and was now an incorporated body. He further stated that one of the provisions of the law under which the charter was granted, made it imperative that the trustees now in office should so continue for one year after the date at which it was granted (Dec. 27th, 1877). He then gave notice that at the next regular meeting of the Society he would move to amend Art. II., Sec. 1 of the By-Laws in such a manner as to change the time for holding the annual meeting for the election of officers, etc., from February to January.

Mr. Menninger moved that the manner in which the terms of office of the Trustees are to be extended be referred to that Board, and that the Society consider itself sufficiently notified of any amendment upon the subject to vote upon the same at the next regular meeting. Carried.

Mr. Menninger, in behalf of the members of the New York College of Pharmacy, extended an invitation to the members of the Kings County Pharmaceutical Society to attend their next conversational meeting on Thursday, the 17th inst., at the College Building in University Place. The invitation was accepted.

Mr. William Wynne desired that the Society should declare itself *pro* or *con* upon the subject of admitting to membership pharmacists who were at the same time *practicing* physicians. He believed that an article should be inserted in the By-Laws making such ineligible. The subject, he said, had previously been discussed, but no definite conclusion had been arrived at.

Mr. Menninger moved that the subject be referred to the Censors of the Society.

Mr. E. A. Sayre called attention to the fact that some of the most active members of the Society were graduates of medicine, although he believed they had all given up the practice of medicine, and now simply followed the profession of pharmacy, and therefore were not the class referred to by Mr. Wynne.

Mr. Menninger thought the question might better remain an open one, to be decided by the ballots cast for any such candidate. He was himself a graduate of medicine, and had practiced for more than ten years, and was now a pharmacist; but when he took up the latter profession he had laid aside the former. He believed the two were incompatible with one another, and no one could practice both together honorably. He believed no physician could do justice to his patient over a drug counter. He, for one, would do all in his power to have any such person applying for membership "black-balled."

Mr. Baker coincided with Mr. Menninger's views. He, too, was a

graduate of medicine; but did not deem it consistent with his present profession to continue in practice, and had not done so.

M. G. A. NEWMAN was of the opinion that, inasmuch as the medical societies refused admission to graduates of medicine who kept drug stores, he thought it no more than proper that the class spoken of should be made ineligible for membership in this Society. This would debar such persons from recognition in either Society, and might have some tendency to remedy the evil.

MR. MENNINGER, having referred to the By-Laws, and finding that the Censors had no power to take any action upon the subject, asked that his motion to refer be withdrawn. No other resolutions were offered upon the subject; it was allowed to rest. It was evidently, however, the sense of a majority of the members present that, "No doctors need apply."

MR. BAKER called attention to the fact that Dialyzed Iron and Fowler's Solution were incompatible. He had them prescribed together, and found that the one would coagulate the other; and although the addition of water would liquefy the compound sufficiently to be dispensed, it would still make a very unsatisfactory mixture. He further stated that although Dialyzed Iron was an antidote for arsenic, the mixture of the two would not render the arsenic inert.

Several members thought that it would be well to request the President to call meetings to order at some definite hour, so that the members would know at just what time the proceedings would commence. Three o'clock was the time decided upon, and the Secretary was ordered to word the notices accordingly.

LOUIS E. NICOT, *Secretary.*

'Ασκληπιὸς ὁ Σωτὴρ

Χάρμα μέγ' ανθρωποισι, κακων θελκτῆρ' οδυναων.

Hymns of Homer, No. XVI.

ITEMS.

——The Proceedings of the Medical Society of the County of Kings.—With this number the second volume is concluded. The Council sends greeting to the Society over a success which every member may applaud. The amount and variety of scientific work sent forth from this Society within two years is a triumphant record. Through the medium of exchanges, the work of this Society has found its way to all parts of the civilized world, and quotations from The Proceedings have been made in journals all over the globe. The scope of The Proceedings is unique and without parallel. No similar Society has ever successfully carried on such a work, if, indeed, a like enterprise was ever attempted. The success of The Proceedings, as the scientific organ of the most enthusiastic, efficient, and best organized Medical Society on the continent, is assured beyond peradventure. The future volume will adhere to its legitimate work, as contemplated in its first number, viz., the dissemination of the scientific work of this Society. The recent addition of the transactions of the Kings County Pharmaceutical Society is an annex germane to the work of the Medical Society and will be continued. With the opening number of the new volume more prominence will be given to the excellent work of the Pathological Section. The papers promised for presentation to the Society assure the continuance of the high character of the work already done.

——To Advertisers.—The patronage of the advertisers in The Proceedings has been cordially received, and has, in the opinion of its conductors, been well-merited. In addition to its large outside circulation, and its distribution among *all* the registered physicians in the county, since the publication of the transactions of the Pharmaceutical Society, it has been put in the hands of every druggist in this, the third city of the Union. No other journal can pretend to a circulation so

peculiar and so concentrated. Assurances from advertisers have repeatedly come unsought, that THE PROCEEDINGS has furnished them their very best advertising investment.

PAPERS FOR THE SOCIETY.—Members of the Society who have scientific work in hand, contemplating its presentation to the Society, will please give early information to the President, that their own choice of time may be consulted, and that there may be proper arrangement for the work of the year.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The Transactions for 1877 have been published and the volume is now ready for distribution. The Society will meet again in February, 1879.

——CONTINENTAL.—Dr. J. S. Prout arrived home on the 20th from a year's residence abroad, and Dr. W. C. Otterson sailed on the 23d for a six months' tour.

——DR. FRANK H. HAMILTON'S generous note, to be found in Dr. Wight's paper, ought to be read with admiration.

——ELECTION OF OFFICERS, 1878, Jan. 10th, *Pathological Section:* FRANK W. ROCKWELL, President; ARTHUR MATHEWSON, Vice-President; B. F. WESTBROOK, Secretary; T. R. FRENCH, Treasurer; J. C. SHAW, Editor of Transactions; E. S. BUNKER, Curator; MATHEWSON, JEWETT, BUNKER, Microscopical Committee; members of the Committee on Publication, the President, Editor, Secretary, and DRS. GRAY and MERRITT.

——HELIOTYPE REPRODUCTIONS.—We wish to call attention to the artistic work now being done, in the interest of physicians, by the Heliotype Printing Co. It is not too much to say that the supply of medical subjects for the ornamentation of doctors' offices has been, until recently, extremely meagre, of which most of the designs have been shocking departures from good taste, and the execution of nearly all has been execrable. But a new leaf has been turned by the heliotype; and, at a small cost, choice illustrations of the medical artistic work of the fifteenth century and later may be had for the frame or portfolio. Dr. Brigham, of 5 Hamilton Place, Boston, will receive orders and send catalogue of the prints thus far produced; of these we will name one subject as intimating the resources at command: the remarkable frontispiece to Colombo's Anatomy, published at Venice in 1569, valuable both from its rarity and excellence.

——ANNOUNCEMENT.—We print below, in the exact terms of the publisher's card, the promise of a valuable work, which has been in hand several years, and is now approaching completion: "Preparing: *The National Dispensatory*, embracing the chemistry, botany, materia medica, pharmacy, pharmacodynamics and therapeutics of the pharma-

copœias of the United States and Great Britain. For the use of physicians and pharmaceutists. By Alfred Stillé, M.D., LL.D. (Professor of Theory and Practice of Med. and of Clinical Med. in the Univ. of Pennsylvania, etc.), and John M. Maisch, Ph.D. (Prof. of Mat. Med. and Bot. in the Phil. College of Pharmacy, Secretary to the Am. Pharm. Association). In one handsome 8vo volume, with numerous illustrations. The want has long been felt and expressed of a work which, within a moderate compass, should give to the physician and pharmaceutist an authoritative exposition of the pharmacopœias from the existing standpoint of medical and pharmaceutical science. For several years the authors have been earnestly engaged in the preparation of the present volume, with the hope of satisfying this want, and their labors are now sufficiently advanced to enable the publisher to promise its appearance during the coming season. Their distinguished reputation in their respective departments is a guarantee that the work will fulfill all reasonable expectation as a guide in the selection, compounding, dispensing, operation and medical uses of drugs, complete in all respects, while convenient in size, and carefully divested of all unnecessary and obsolete matter."

PUBLICATIONS RECEIVED.

——Transactions of the Canada Medical Association.—10th annual meeting. Vol. 1, pp. 244. Montreal, 1877.

This Association appears to have been slow to rush into print, but it begins its course in admirable form. A glance through the volume discovers contributions by Drs. Hingston, Fulton, Osler, Workman, Trenholme and Fenwick. The paper of the latter is on the excision of the knee-joint, and is illustrated as finely as any similar paper that we have ever seen. The Society has not far from 500 members.

——The Illustrated Catalogue of Surgical Instruments of Messrs. Codman and Shurtleff.—A well-printed list of 130 pages, giving large attention to atomizing apparatus, among which appears Lister's antiseptic engine. Hard rubber vies with steel in the variety of its adaptation to professional needs.

——On the Dressing of Stumps.—By Dr. Louis Bauer. This claims for the Burow method of dressing stumps advantages, in respect of simplicity and low mortality, over Lister's, or any of the older systems. (Reprint from *Clinical Record*).

——Transactions of the Medical and Chirurgical Society of Maryland.—79th Annual Session, April, 1877. Baltimore. This is an attractive book, and most creditable as to its contents and as to its

execution. It contains the oration by Dr. Weir Mitchell, of Philadelphia, on Therapeutics, inclusive of his novel fat-and-blood-making treatment. This paper should be read and weighed by every physician. There are also—not to mention all—articles of interest by Dr. G. S. Lynch, on Veratrum Viride, quite enthusiastic; by Dr. Van Bibber, on Modes of Dress, and Choleate of Soda for the Prevention of Biliary Calculi, and for the treatment of some forms of Dyspepsia; by Dr. John Morris, on the Management of the Perineum, and other obstetric topics. We quote one sentence to indicate the drift of his thought: "Meddlesome midwifery is bad, it is true; faulty midwifery is still worse; but no midwifery at all means, ofttimes, trouble, peril, death." It incidentally appears from this volume that Maryland is governed with sufficient intelligence to maintain a State Vaccine Agency, from which *bovine* lymph is furnished to their physicians free of charge.

——Hospital Plans.—Five Essays relating to the construction, organization and management of hospitals, contributed by their authors for the use of the Johns Hopkins Hospital, of Baltimore. New York: Wm. Wood & Co. Pp. 352.

The five authors are Assist. Surg. J. S. Billings, Drs. Norton Folsom, Joseph Jones, Caspar Morris and Stephen Smith. We are indebted to President Gilman, of the Johns Hopkins University, for this volume. Its value, as a work of reference, exceeds that of any work previously produced in this country, and is sought for by every one interested in hospital plans.

——The Medical Register of New York, New Jersey and Connecticut has passed from the editorial supervision of its long-time conductor, Dr. A. M. Purdy, a step of which we were forewarned in the preface of the last issue. During the eight years of Dr. P.'s administration, the *Register* has grown into a commanding influence. Dr. W. T. White, for several years the President of the Medico-Historical Society, now takes the helm. This is an assurance that nothing will be left undone to keep the *Register* up to its work.

——The Warren Prize.—This triennial offer of four hundred dollars will be awarded in 1880, on a subject with a large margin, namely, "Original Observations in Physiology, Surgery and Pathological Anatomy." Competing essays must be forwarded to the resident physician, Massachusetts General Hospital, Boston, on or before February 1st, 1880. Philadelphia has captured the last two prizes. . . . . The next Astley Cooper prize, of £300, will be awarded to the best essay on "The Cranial Nerves—their Anatomy, and its Relation to Surgical Diseases and Injuries." Essays must be sent to Guy's Hospital by January 1st, 1880.

——Contributions to Operative Surgery and Surgical Pathology, by J. M. Carnochan, M.D. New York: Harper and Brothers, 1877. Parts 1 and 2, pp. 64; Part 3, pp. 48.

This elegantly printed quarto is the beginning of a series of ten parts, to appear quarterly; it is illustrated by full-page lithographs, somewhat resembling those in the publications of the Surgeon-General's office. The subjects treated in these first numbers are the ligation of arteries for elephantiasis and certain forms of hemorrhage; amputation of the lower jaw, and shock and collapse. Carnochan's first operation for elephantiasis was done in 1852, from which time down to 1874 it has been performed 32 times; almost all of the later cases have been done by German surgeons. The work is dedicated to Prof. Gross.

——Points in the Diagnosis of Hepatic Affections, by E. G. Janeway, M.D. New York: G. P. Putnam's Sons, 1877, pp. 33. *American Clinical Lectures*, Vol. III, No. 5. E. C. Seguin, M.D., Editor.

The points of diagnosis dwelt upon are chiefly two: the size of the liver and the significance of jaundice. The subjects are painstakingly handled; and although very little entertainment can be expected from them, the author succeeds in enlivening them by the narration of instructive clinical and autopsical experience. His known predilections for and eminence in pathology, afford him abundant resources in the latter particular.

——The Popular Science Monthly and the Supplement thereto, for January, are received from D. Appleton & Co.

Not a small proportion of the articles are by physicians, who are thus contributing wisely to the diffusion and popularizing of sound views respecting medicine. One paper, let us mention, is from the pen of Sir Thomas Watson, the venerable, whose discourse has not lost its cunning, so well known to medical students during two generations. His subject is: "Hydrophobia and Rabies." He declares war against all canine tramps.

——Metric Measures.—A card containing a "Table for converting Metric Weights into Troy Weights," has been sent us by Dr. Fred. Hoffmann, of Sixth Avenue, New York. It is arranged to be hung up in the office. It is borrowed from Dr. H.'s "Manual of Chemical Analysis," published by D. Appleton & Co.

——University of Vermont.—The 25th Annual Announcement of the Medical Department at Burlington is just at hand. Counting from the original establishment of this school, its age should stand at over fifty years. It is one of the ten oldest, now extant, institutions. The numerous alumni of Vermont living in this section rejoice to see the signs of vigor and progress exhibited by their *alma mater*. This school

is one of the charter members of the young Association of Medical Colleges, a fact which, as most believe, commits it and other members to still further advance the standard of requirements and the facilities for sound medical education.

OBITUARY.

JOHN ANDREW BRADY died September 10th, 1877, in forty-sixth year of age, at his late home at corner Bedford Avenue and Morton Street, Brooklyn. He was born in New York City, January 11th, 1832; in that city he received his early education. He began the study of medicine, when about sixteen years of age, under the guidance of Dr. Rufus Belden, whose office stood for many years at the corner of South Fifth and Fourth Streets, E. D. He attended lectures at the Crosby Street School, but took his degree at the Vermont Medical College, Woodstock, in 1852. For one year he was, while a student, an assistant physician at the Kings County Hospital. He began practice on Fifth Street, near Grand Street, in the fall of 1852, and after that time he spent in the eastern district the remaining twenty-five years of his life, in the active practice of his profession. He rapidly grew into the good opinions of his locality, and into an active and profitable business, which was still on the increase when the fatal event ended all. In 1858 he joined this Society, in which he was repeatedly chosen censor, and also as delegate to various medical conventions. His name stood, at the time of his death, on the list of those eligible to permanent membership in the State Medical Society. He was a member of the Physicians' M. Aid Association. He held public office as the City Physician, Surgeon of Police under the Metropolitan Board, and Surgeon for the Examination of Drafted Men in the Eastern District, at the time of the late war. He was for many years Consulting Physician to the Williamsburgh Dispensary and to the Kings County Hospital at Flatbush. His death bereaves a widow and six children. His obsequies, from the Bedford Avenue Reformed Church, were attended by a large retinue of physicians, public men and civilians of every grade. These are some of the principal events proper to call to mind in this brief memorial of our departed fellow-member, Dr. Brady. Of his social and professional success, it may safely be said that it was exceptionally rapid and brilliant. His brief twenty-five years of practice must have been busy years, to have attained so many indications of prosperity as Dr. Brady possessed when he was cut off--yet in the prime of his activity and ability. And the esteem and respect exhibited for him were sufficient to show that he had practriced his art worthily and to the eminent satisfaction of his clients. His genial, affable and yet dignified character were well known in this whole community; he was easily approachable and popular, and was sought for and consulted far and near in matters relating to his profession not only, but in matters of public and private interest. His fatal illness was short and sharp, the malady being perihepatic or diaphragmatic abscess discharging into the peritoneum, and lighting up extensive and intense inflammation, distension and eruption of bile-ducts, of pleuritis and pericarditis. An account of the profound lesions disclosed at the autopsy has recently been published in the *New York Medical Journal*, current volume, p. 53.

JO. C. HUTCHISON, M.D.,
GEO. W. BAKER, M.D.,
R. M. WYCKOFF, M.D.,
Committee.

December 18th, 1877.

——The Regular Monthly Meetings of the Medical Society of the County of Kings are held at 8 P. M. on the third Tuesday of each month, at Everett Hall, 398 Fulton Street.

The February meeting will be held on the 19th, at which time the following Papers will be presented :

Reason *versus* Tradition in the treatment of certain injuries to the Wrist-joint, by L. S. Pilcher, M.D. Second paper. With blackboard illustrations and sections from the cadaver.

The Importance of Good Nursing, by Benj. Edson, M.D.

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(1878 to 1882.)

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Chap. XI, Art. 2, of By-laws: "Any Member elected as Delegate to the Medical Society of the State of New York, who shall be unable to act as Delegate during two successive years, shall be considered to have vacated his position as Delegate."

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The A. M. A. meets at Buffalo, June 4th, 1878.

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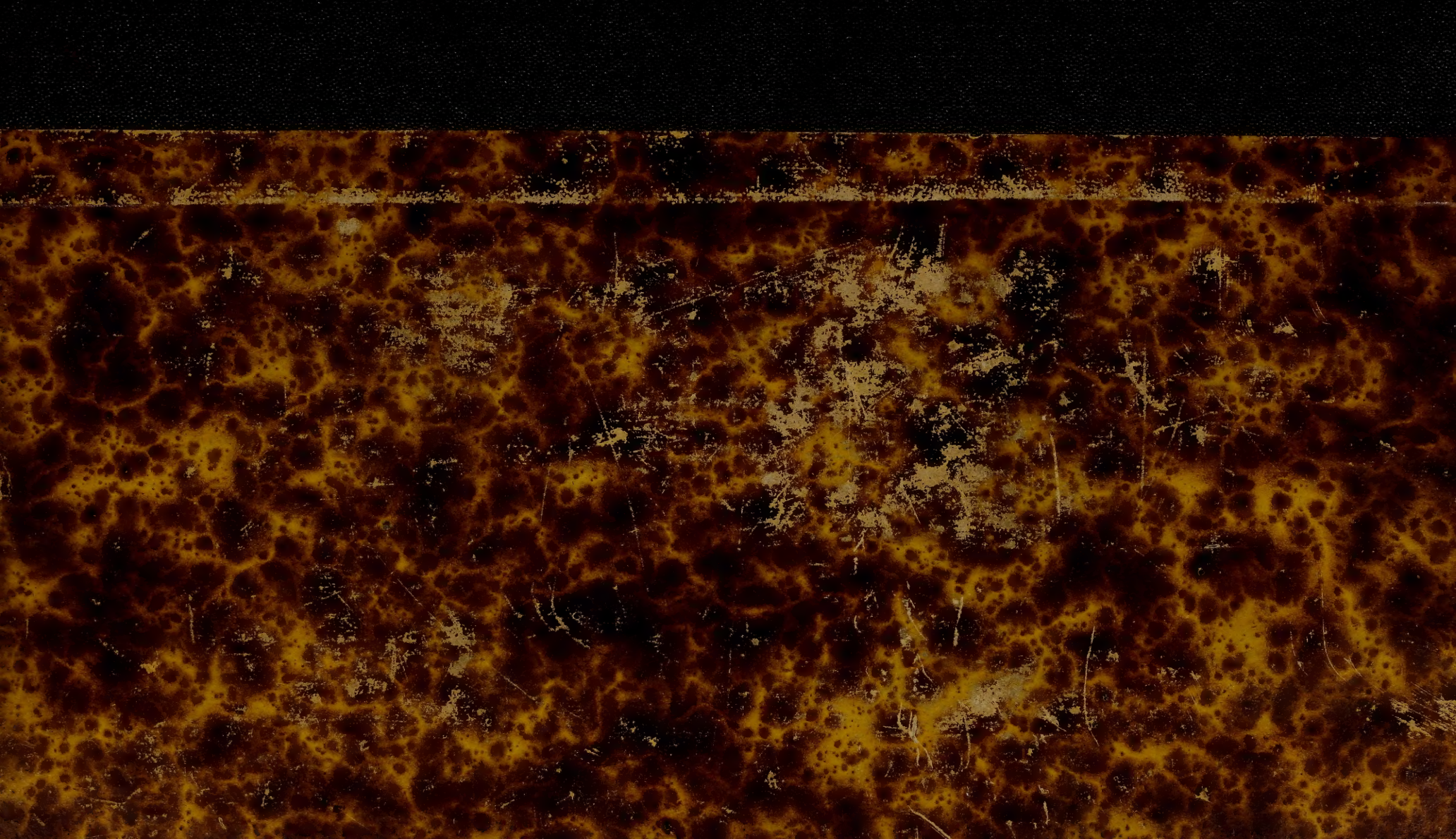
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